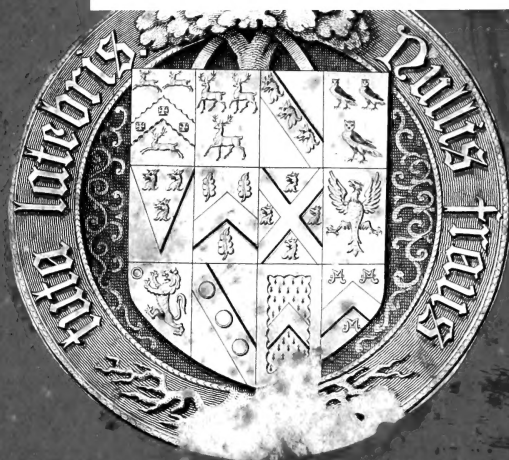


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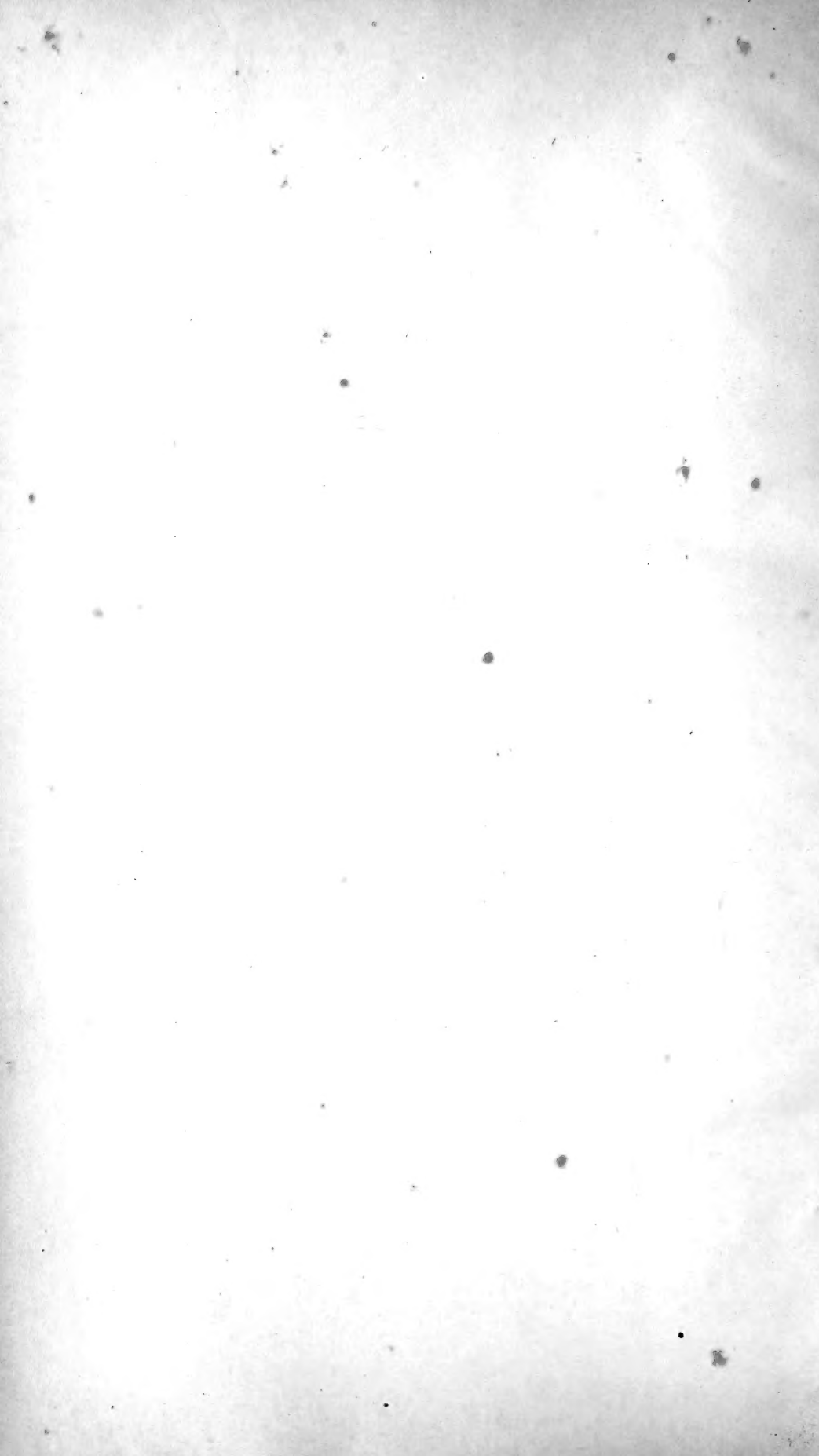
BIOLOGY



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REFUGIUM BOTANICUM.

VOL. IV.

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REFUGIUM BOTANICUM
OR
FIGURES AND DESCRIPTIONS
FROM LIVING SPECIMENS
OF
LITTLE KNOWN OR NEW PLANTS
OF BOTANICAL INTEREST.

EDITED BY
W. WILSON SAUNDERS, F.R.S., F.L.S.

THE DESCRIPTIONS BY
J. G. BAKER, F.L.S.
ASSISTANT CURATOR OF THE KEW HERBARIUM.

THE PLATES BY W. H. FITCH.

VOL. IV.

LONDON:
JOHN VAN VOORST, 1, PATERNOSTER ROW.

1871.

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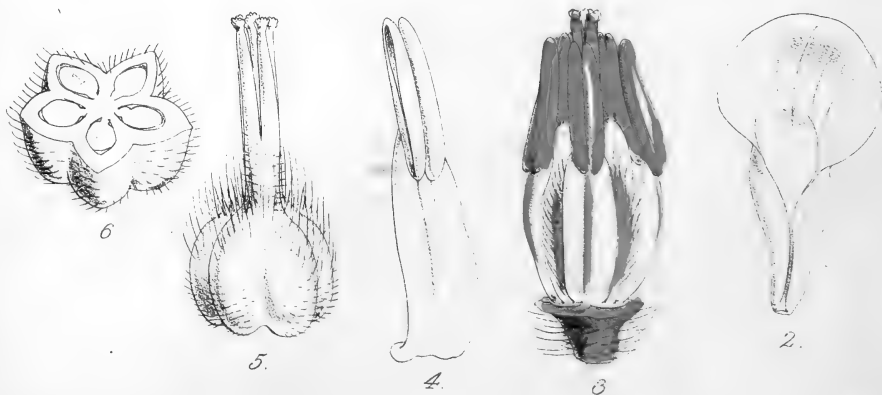
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W.H. Fitch, del. et lith.

J.N. Eschschamp

Hermannia conglomerata, E. & Z.

TAB. 217.

Natural Order STERCULIACEÆ.

Tribe HERMANNIÆ.

Genus HERMANNIA, *Linn.*

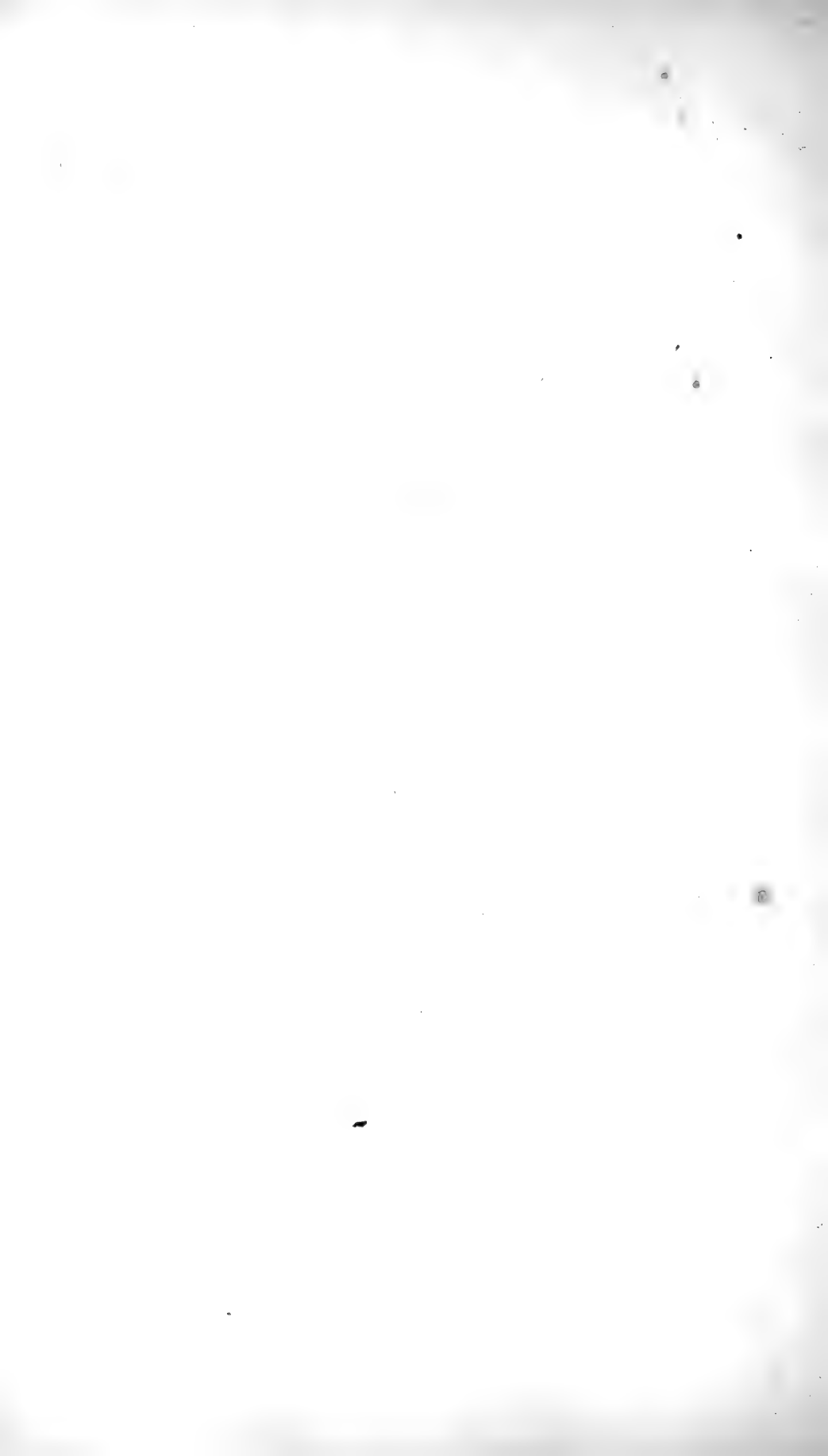
- H. CONGLOMERATA (*Eck. et Zeyh.* No. 352). Fruticosa, ramis griseo-villosis, foliis distincte petiolatis rotundatis inciso-crenatis plicatis supra glabris infra griseo-villosis basi truncatis vel late cuneatis, stipulis foliaceis, racemis terminalibus multifloris congestis, pedicellis perbrevibus vel subnullis, bracteis subulatis, calyce villosio dentibus deltoideo-cuspidatis tubo campanulato æquantibus, petalis spathulatis flavis calyce sesqui-longioribus, filamentis ligulatis antheris paulo longioribus.—*Harr. Fl. Cap. i.* p. 194.

A native of Cape Colony.

A low copiously-branched shrub, the old branches woody and glabrous, the young ones densely clothed with soft shining spreading gray hairs. *Stipules* foliaceous. *Leaves* shortly-stalked, remarkably plicate, roundish, thick in texture, but not at all coriaceous, six to fifteen lines across each way, blunt, irregularly inciso-crenate, the base subentire, truncate or broad-cuneate, the upper surface green and glabrous, the lower paler and densely clothed with soft shining gray hairs. *Flowers* in copious dense clusters at the end of the branches. *Pedicels* very short or scarcely any. *Bracts* subulate, shorter than the calyx. *Calyx* two to two and a half lines deep, densely villose; the deltoid-cuspidate teeth equalling the campanulate tube. *Petals* pale yellow, spathulate, half as long again as the calyx. *Filaments* ligulate, rather longer than the linear-oblong *anthers*. *Ovary* pubescent, globose, deeply 5-sulcate.

TAB. 217.—1, flower complete; 2, single petal; 3, entire flower, with calyx and corolla stripped away; 4, a single stamen; 5, pistil; 6, horizontal section of fruit: all magnified.—*J. G. B.*

I received the seeds of this species of *Hermannia*, which is only of botanical interest, from my friend Mr. H. S. Poole. It is easy of cultivation, grown in a mixture of sandy loam and decayed leaf-soil, using small pots, and letting the plant have a cool airy greenhouse treatment. It is easily increased by seeds or cuttings placed in sand in a close frame.—*W. W. S.*



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J. N. Fitch, imp.

Pelargonium heracleifolium. *Lodd.*

TAB. 218.

Natural Order GERANIACEÆ.

Tribe PELARGONIEÆ.

Genus PELARGONIUM, *L'Herit.*

Section POLYACTIUM.

- P. HERACLEIFOLIUM* (*Lodd. Bot. Cab. t. 437*). Radice tuberoso, caule brevi herbaceo, stipulis deltoideis, foliis breviter pubescentibus oblongo-deltoideis dimidio superiore profunde pinnatifidis, deorsum pinnatis, segmentis late lobatis irregulariter inciso-dentatis, pedunculis valde elongatis, umbellis 9—12-floris, bracteis linearibus, calycis segmentis linearibus reflexis petalis albidis vix striatis oblanceolatis subæqualibus duplo brevioribus. — *Sweet. Ger. t. 211; Harv. Fl. Cap. i. p. 272, ex parte.*

A native of the Cape of Good Hope.

Root oblong, tuberous. *Stem* short, herbaceous, thinly clothed with spreading gray hairs. *Stipules* deltoid, a quarter of an inch long. *Petioles* an inch to two inches long, thinly pubescent. *Leaves* herbaceous, thinly clothed, especially beneath, with soft gray pubescence, oblong-deltoid, the lower ones five to six inches long, the upper half deeply pinnatifid, the lower lobes free, sometimes petiolate and remote from the others, the broad segments irregularly toothed, the upper surface mid-green, the lower glaucous. *Peduncles* erect, softly thinly pubescent, six to nine inches long. *Umbels* nine- to twelve-flowered. *Bracts* linear, two to three lines long. *Flowering pedicels*, including the *calyx-spur*, nine to twelve lines long. *Calyx-segments* linear, four to five lines deep, reflexed when the flower expands. *Petals* twice the calyx-segments, oblanceolate, whitish, blunt, scarcely at all striped, subequal. *Filaments* ten, seven antheriferous. *Beak* of the fruit sixteen to eighteen lines long.

TAB. 218.—1, single flower, magnified.—*J. G. B.*

I received the seeds of this very interesting species of *Pelargonium* from South Africa, collected there by Mr. Thos. Cooper. It flowers freely, and thrives if potted in a mixture of light turfy loam and sandy peat. The pots should be well drained, and the plant should be grown in a warm airy greenhouse, with a liberal supply of water while in the growing state, and but little when the plant is resting. The pale cream-colour of the petals, without spots or stripes, is unusual and remarkable.—*W. W. S.*

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W.H. Fitch, del. et lith.

J.N. Fitch imp.

Pelargonium geifolium, E. Meyer

TAB. 219.

Natural Order GERANIACEÆ.

Tribe PELARGONIÆ.

Genus PELARGONIUM, L'Herit.

Section POLYACTIUM.

P. GEIFOLIUM (*E. Meyer in herb. Drege*). Radice tuberoso, caule brevi herbaceo, stipulis deltoideis, foliis breviter pubescentibus oblongis dimidio superiore profunde pinnatifidis, deorsum pinnatis, segmentis late lobatis irregulariter inciso-dentatis, pedunculis valde elongatis, umbellis 9—15-floris, bracteis lanceolatis, calycis segmentis linearibus reflexis petalis flavis castaneo striatis oblanceolatis subæqualibus duplo brevioribus. — *P. heracleifolium*, *Harv. Fl. Cap. i. p. 272, ex parte.*

A native of the Cape of Good Hope.

Root oblong, tuberous. *Stem* short, herbaceous, thinly clothed with spreading gray hairs. *Stipules* deltoid, two to three lines deep. *Lower petioles* four to six inches long, thinly hairy. *Leaves* herbaceous, thinly clothed, especially beneath, with soft gray pubescence, oblong, the lower ones six to eight inches long, the upper half deeply pinnatifid, the lower lobes free, the broad segments irregularly toothed, the upper surface mid-green, the lower much paler. *Peduncles* erect, six to ten inches long, thinly clothed with soft spreading gray hairs. *Umbels* nine- to fifteen-flowered. *Bracts* lanceolate, four to six lines long. *Flowering pedicels*, including the calyx-spur, twelve to eighteen lines long. *Calyx-segments* linear-lanceolate, four to five lines deep, reflexed when the flower expands. *Petals* twice the calyx-segments, oblanceolate, blunt, bright yellow, subequal, conspicuously veined with dark brown. *Fertile filaments* seven.

Very near the last, with which Dr. Harvey unites it.

TAB. 219.—1, single flower, viewed from beneath, magnified.—*J. G. B.*

This plant, when under the same treatment as recommended for *P. heracleifolium*, Tab. 218, flowers freely and grows strongly. Its yellow petals, all streaked with crimson-brown, give the plant a lively appearance when in flower. As remarked by Mr. Baker, this and the preceding species are closely allied, but under cultivation they keep their distinctive characters well.—*W. W. S.*

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W.H. Eich. del. et lith.

J.N. Frich. imp.

Micromyrtus microphylla, Benth.

TAB. 220.

Natural Order MYRTACEÆ.

Tribe CHAMELAUCIÆ.

Genus MICROMYRTUS (*Benth. Gen. Plant.* i. 700). Calycis tubus cylindricus vel turbinatus, 5—10-costatus, ovario plus minus adnatus; limbi lobi parvi, petaloidei vel scariosi, persistentes, nunc ad marginem vix conspicuum reducti. Petala 5, patentia, sæpius decidua. Stamina 10, petalis sepalisque opposita, vel 5 petalis opposita, filamentis brevibus liberis; antherarum loculi distincti subglobosi, rimis parallelis vel divergentibus dehiscentes. Ovarium inferum, 1-loculare; stylus filiformis, brevis, glaber, stigmate capitato; ovula 2—4 ad apicem placentæ filiformis a basi ad apicem loculi extensæ collateraliter pendula. Fructus indehiscens, calycis tubo adnatus et limbo persistente coronatus. Frutices glabri ericoidei australienses.

M. MICROPHYLLA (*Benth. Fl. Austral.* iii. p. 65). Foliis linearibus triquetris quadrifariis minute ciliatis plerisque dense imbricatis, floribus racemosis vel capitatis singulis in axillis foliorum subsessilibus, calycis tubo turbinato 5-costato, limbi segmentis rotundatis scariosis, petalis spathulatis calycis segmentis duplo longioribus, staminibus 5, antherarum loculis parallelis. — *Imbricaria ciliata*, *Smith*, *Linn. Trans.* iii. 259. *Bækia microphylla*, *Sieber*, *D. C. Prodr.* iii. 230. *B. plicata*, *F. Muell. Fragm.* i. 30.

A native of New South Wales, Victoria and South Australia.

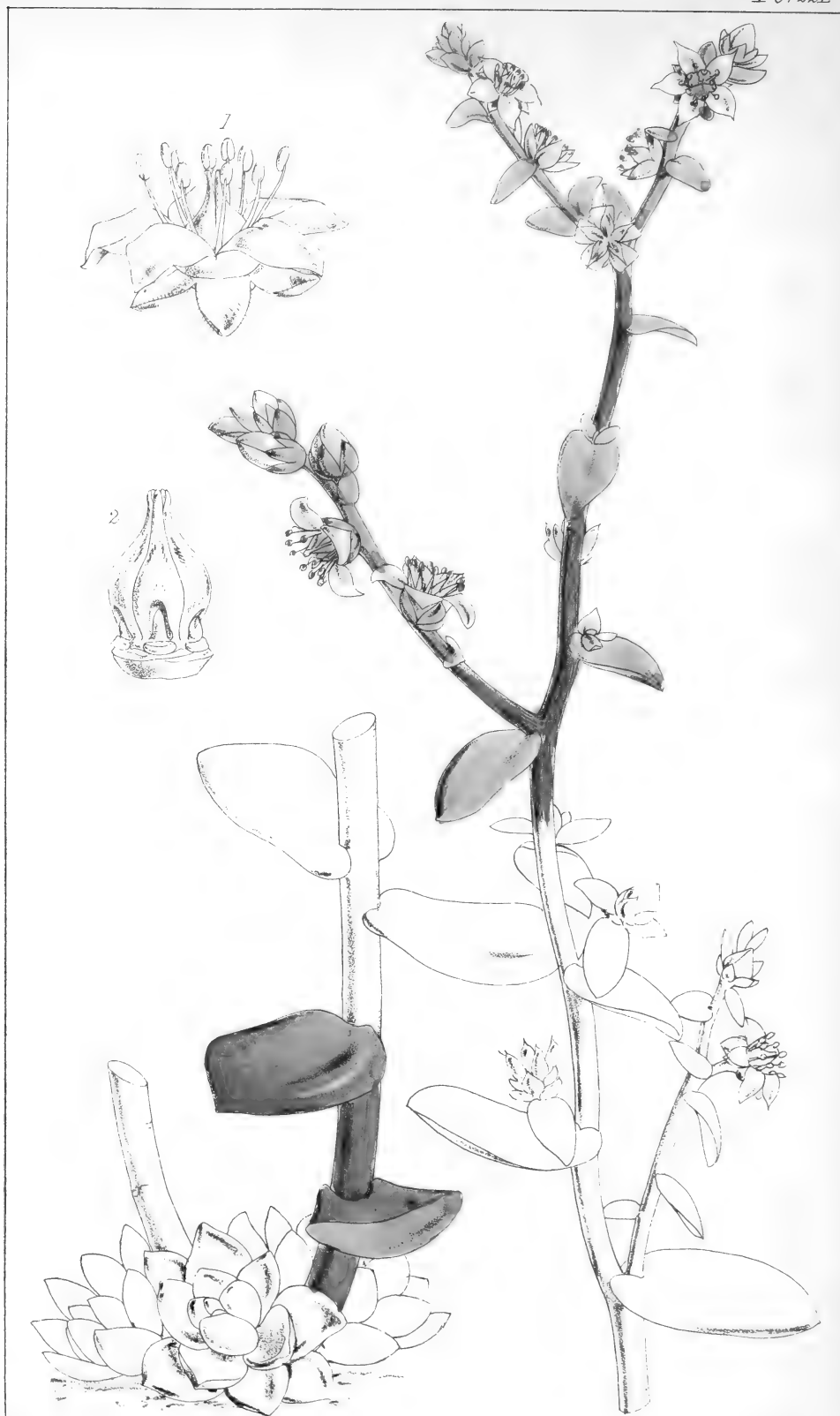
A copiously-branched erect or diffuse shrub, with glabrous branches. *Leaves* usually densely imbricated, coriaceous, linear, erecto-patent, one line to three lines long, four-ranked on the branches, triquetrous, flat on the face, conspicuously gland-dotted, the margins minutely ciliated. *Flowers* racemose or subcapitate, each singly subsessile in the axil of a leaf. *Calyx-tube* turbinate, about a line deep, prominently five-ribbed; *lobes* round, scariose, persistent, minutely ciliated, one-fourth to one-third the length of the tube. *Petals* spathulate, white or tinged with red, a line long. *Stamens* five, opposite the petals, the *filaments* filiform, the *anthers* oblong with parallel cells. *Ovules* four.

TAB. 220.—1, leaf; 2, entire flower; 3, the same, with some of the calyx-lobes, petals and stamens stripped away; 4, a single petal;

5, vertical section of ovary; 6, horizontal section of ovary: all magnified.—
J. G. B.

I am indebted to the Royal Botanic Garden at Kew for the liberty of figuring this small but interesting Myrtaceous plant.—
W. W. S.

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OF THE



W. H. Finch, del. et lith.

J. N. Eitch, imp.

Sedum ebracteatum, M & S.

TAB. 221.

Natural Order CRASSULACEÆ.

Genus SEDUM, Linn.

S. EBRACTEATUM (*Moc. et Sess. in D.C. Prodr.* iii. 409). Foliis dense rosulatis obovatis subacutis crassis pallide viridibus glabris, ramorum floriferorum similibus patulis cordato-amplexicaulibus, cymis distantibus elongatis 5—6-floris bracteatis spicatis, lateralibus simplicibus, terminalibus furcatis, pedunculis glandulosis, sepalis glandulosis lanceolatis basi connatis, petalis lanceolatis albidis calyce duplo longioribus flore expanso falcatis, staminibus petalis paulo brevioribus exterioribus supra basin petalorum insertis.

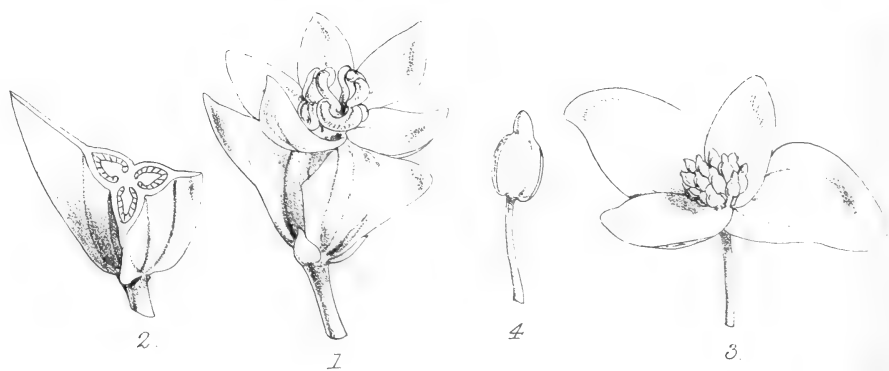
A native of Mexico.

Leaves a dozen or more in a dense sessile rosette, obovate, pale green, glabrous. *Flowering stems* erect, about a foot high, glabrous, green mottled with red, the *lower leaves* like those of the rosettes, spreading, cordate-amplexicaul, an inch long, the *upper* growing gradually smaller. *Flowers* in a few distant elongated spicate cymes, with about half a dozen flowers in each, the lateral ones simple, on short erecto-patent *peduncles*, the terminal one dichotomously forked with two equal branches. *Peduncles* and *calyx* finely glandular. *Sepals* lanceolate, connate at the very base. *Petals* whitish, twice as long as the calyx, recurved, the fully-expanded flower a quarter of an inch across. *Stamens* subequal, nearly as long as the petals, the outer row attached a little above their base. *Hypogynous scales* lingulate.

TAB. 221. — 1, flower, complete; 2, flower, with calyx and corolla stripped away: both magnified.—*J. G. B.*

This is a species of *Sedum* seldom seen in collections, and is of easy cultivation in a warm dry greenhouse, potted in very sandy turfy loam, with a mixture of brick-rubbish or old mortar. It requires but little water at any season, but is very impatient of it during the winter season, when especially it should be kept near the glass. I have grown the plant for some years, and I regret that I have now no note of the source from whence my stock was obtained.—*W. W. S.*

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TAB. 222.

Natural Order BEGONIACEÆ.

Genus BEGONIA, Linn.

Section LEPSIA, A.D.C.

B. FOLIOSA (H. B. K. Nov. Gen. Amer. p. 183, t. 642). Fruticosa, ramosissima, glabra, ramis gracilibus angulatis, stipulis scariosis persistentibus ovatis vel lanceolatis aristatis, foliis confertis subsessilibus glaberrimis supra nitidis viridibus subtus albido-punctatis inæquilateraliter ovato- vel obovato-lanceolatis argute aristato-seratis, interdum leviter trilobatis, pedunculis gracilibus axillaribus 1—4-floris, bracteis oppositis lanceolatis scariosis, bracteolis lanceolatis scariosis ad ovarium adpressis, sepalis 4 interioribus plerisque minoribus, capsulæ alis valde inæqualibus, majore capsulâ latiore margine superiore truncato.—A. D.C. in D.C. Prodr. xv. 375.

A native of Columbia.

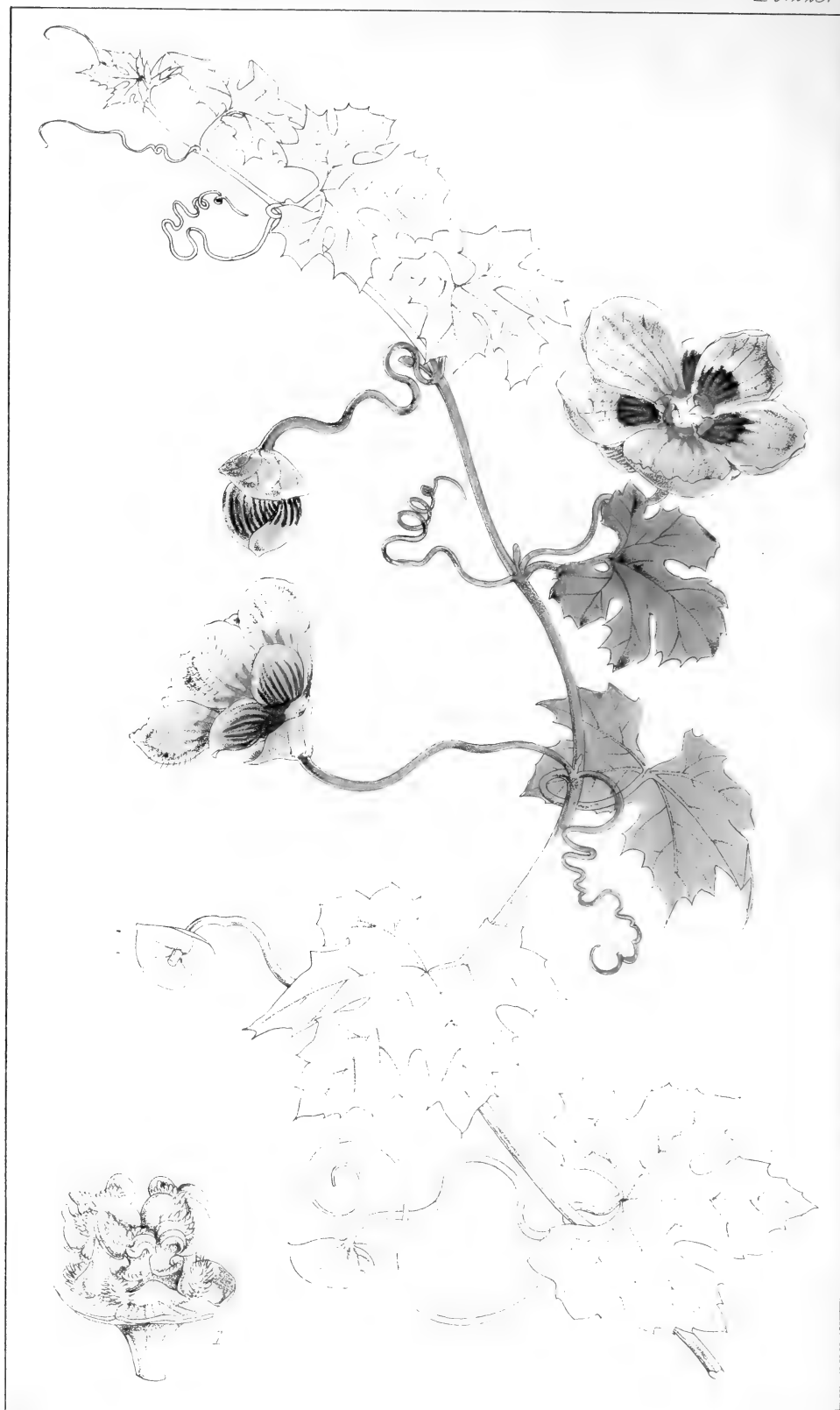
Stems fruticose, copiously paniculately branched; the branches angular, very slender, quite glabrous like the rest of the plant. *Stipules* scariose, persistent, two to three lines long, ovate or lanceolate, unequal-sided, aristate. *Leaves* crowded, moderately fleshy in texture, quite glabrous on both sides, bright shining green above, thickly covered all over beneath with minute white spots, very nearly sessile, ovate- or obovate-lanceolate, more or less unequal-sided, six to nine lines long, sometimes shallowly three-lobed, the margin furnished with short aristate teeth, principally in the upper half. *Flowers* one to four on slender axillary *peduncles*, which are under an inch long below the fork, or, if simple, below the opposite scariose lanceolate persistent *bracts*. *Petals* four, white, the outer pair generally the largest, ovate-lanceolate, four lines deep. *Female flowers* with a pair of caducous scariose lanceolate *bracteoles* adpressed to the ovary. *Wings of the capsule* very unequal, coriaceous, reticulated, the largest three to four lines broad, with the upper edge nearly straight, the lower oblique.

TAB. 222.—1, female flower complete; 2, horizontal section of ovary; 3, male flower; 4, a single stamen; all magnified.—J. G. B.

I have no *Begonia*, among a very large number of species which I cultivate, with the same gracefully pendent habit as the species now figured. The flowers are insignificant, but the plant,

when grown in shallow pots and suspended in a moist warm atmosphere, gives out numerous drooping leafy branches, and is striking for its elegant shape. The plant should be potted in rough turfy peat, with a small portion of loam, and must be carefully protected from the mid-day sun. I am indebted to the Messrs. Low & Son, of Clapton, for my stock of this plant.
—*W. W. S.*

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W.H. Fitch, del. et lith.

J.N. Fitch, imp.

Momordica involuocrata, E. Meyer.

TAB. 223.

Natural Order CUCURBITACEÆ.

Tribe CUCUMERINÆ.

Genus MOMORDICA, Linn.

M. INVOLUCRATA (*E. Meyer, in Herb. Drege*). Caulibus gracilibus glabris, foliis glabris petiolatis utrinque viridibus deltoideo-cordatis ad medium palmatim 5-lobatis lobis repando-dentatis dentibus aristatis, pedunculis unifloris, bracteolis solitariis magnis reniformibus integris calyce involucrantibus, calycis segmentis rotundatis obtusis, petalis obovato-spathulatis calyce duplo longioribus, fructibus ovoideis inconspicue tuberculatis, irregulariter et lateraliter ruptis, seminibus arillo rubro instructis.—*Sonder, Fl. Cap. ii. 491.*

A native of Natal, gathered by nearly all the botanists who have collected in the colony.

Stems herbaceous, slender, wide-twining, angular, glabrous, the developed internodes twelve to eighteen lines long. *Tendrils* copious, firm, slender, many times spirally twisted. *Petioles* glabrous, of the lower leaves above an inch long. *Leaves* herbaceous in texture, green and glabrous on both sides, cordate-deltoid, an inch to three inches long, palmately five-lobed, the upper two divisions reaching half-way down to the apex of the petiole, the lobes repando-dentate, each tooth with a conspicuous soft mucro. *Flowers* solitary, on slender flexuose axillary *peduncles* an inch to three inches long, with a large foliaceous entire reniform *bracteole* at the apex clasping the calyx like an involucre. *Calyx* four to five lines deep, the round blunt lobes reaching about half-way down. *Petals* eight to nine lines deep, obovate-spathulate, cream-coloured with a dark spot at the base. *Stamens* three, the *filaments* free, the *anthers* connate. *Fruit* ovoid, slightly tubercled, bursting irregularly and laterally, the *seeds* furnished with a red arillus.

TAB. 223.—1, flower, with calyx and corolla stripped away, magnified.—*J. G. B.*

For the opportunity of figuring this plant I am indebted to Mr. Thos. Cooper, of the Holmsdale Road, Reigate, who has under cultivation many interesting South-African plants.—*W. W. S.*



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W.H. Fitch, del. et lith.

J.N. Fitch imp.

Lonicera japonica Thunb.
var. *chinensis* (Wats.)

TAB. 224.

Natural Order CAPRIFOLIACEÆ.

Genus LONICERA, *Linn.*Section XYLOSTEON (*Tourn.*)

L. JAPONICA (*Thunb. Fl. Jap.* p. 89). Ramis elongatis volubilibus junioribus pilosis, foliis breviter petiolatis oblongis acutis precipue infra plus minus pubescentibus, pedunculis axillaribus bifloris petiolis æquantibus, floribus sessilibus flavidis extrorsum glandulosis rubro-tinctis, bracteis parvis oblongis, calycis segmentis lanceolatis tubo æquantibus, corollæ tubo cylindrico segmentis limbi paulo excedentibus. — *D.C. Prodr.* iv. p. 333; *Miquel, Ann. Mus. Lug. Bot.* ii. p. 269.

Var. CHINENSIS (*Watson*). Ramis et foliis glabris. *L. chinensis*, *Watson, Dendr. Brit.* t. 117. *L. flexuosa*, *Ker, Bot. Reg.* t. 712, non *Thunb.*

A native of Japan and China.

A tall shrub, with elongated climbing glabrous branches. *Leaves* shortly petiolate, oblong or ovate-oblong, subacute, entire, two to three inches long, bright shining green above, paler with raised veins below, both sides glabrous. *Flowers* in pairs from the axils of the upper leaves, sessile, on a very short common *peduncle*, with a pair of small leaf-like oblong *bracts* at their base. *Calyx* very small, the lanceolate-acuminate teeth equalling the tube. *Corolla* fifteen to eighteen lines long, yellowish, more or less tinged with red, finely glandular externally, the cylindrical tube exceeding the limb, the upper lip of which has three imbricated spathulate lobes which do not reach half-way down, the lower lip entire. *Style* quite, and *stamens* nearly, as long as the corolla.

TAB. 224.—1, flower complete, viewed from above, magnified.—*J. G. B.*

A very pretty, useful, hardy plant, for covering walls or trellis-work. It will grow freely in any good soil, and is easily propagated by cuttings, layers or seeds.—*W. W. S.*

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W.H. Fitch del et lith

J.N. Fitch imp

Othonna trinervia, D.C.

TAB. 225.

Natural Order COMPOSITÆ.

Sub-order CYNARÆÆ.

Tribe CALENDULÆÆ.

Genus OTHONNA, Linn.

O. TRIPLINERVIA (*D.C. Prodr.* vi. 478). Frutex carnosa glaberrima ramis crassis teretibus, foliis prope apicem ramorum aggregatis oblanceolatis glauco-viridibus obtusis vel subacutis 3—7-nerviis e basi tertii superioris spathulatim angustatis subsessilibus vel breviter petiolatis, pedunculis nudis foliis superantibus, capitulis 6—12 corymbosis, pedicellis gracilibus ebracteatis elongatis, involucri foliis 7—8 æqualibus basi connatis, radii ligulis 5—6 demum reflexis. — *Harv. Fl. Cap.* iii. 337.

A native of Cape Colony.

An erect fleshy shrub several feet high, quite glabrous in all its parts. *Branches* straight, green, fleshy, terete, four to nine lines thick, marked in the lower part with the semicircular scars of the fallen leaves. *Leaves* in a lax cluster towards the apex of the branches, oblanceolate, fleshy, glaucous-green above, still more glaucous beneath, the largest four to five inches long, nine to fifteen lines broad, blunt or subacute, entire or very slightly repand, furnished with one to three main veins on each side of the midrib, spathulately narrowed from a third of the way down to the base, subsessile or the lower ones shortly petiolate. *Peduncles* one to four to a branch, erect, pale green, naked, usually overtopping the leaves. *Heads* six to twelve, corymbose, on slender erect naked *pedicels* six to thirty lines long. *Involucre* three to four lines deep, composed only of seven or eight ligulate equal fleshy convex pale green scales, connate at the base. *Ligules* five or six, half an inch long, bright yellow, finally reflexed.

TAB. 225.—1, head of flowers; 2, ligulate floret of the ray; 3, its stigmas; 4, ray of pappus; 5, tubular floret of the disk; 6, stamen; 7, its stigmas; all magnified.—*J. G. B.*

A tall greenhouse plant, seldom met with in collections and seldom seen in flower, as the flowers are only produced on the large old plants. It seems very easy of cultivation, grown in light sandy loam, and kept moderately dry during the winter. I have had my plant for some years, but from what source it was obtained I have no note.—*W. W. S.*

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W.H. Fitch, del. et lith.

J.N. Fitch imp.

Brachystelma ovata, Oliver.

TAB. 226.

Natural Order ASCLEPIADACEÆ.

Tribe STAPELIEÆ.

Genus BRACHYTELMA, *R. Br.*Section DICHÆLIA (*Harv.*)

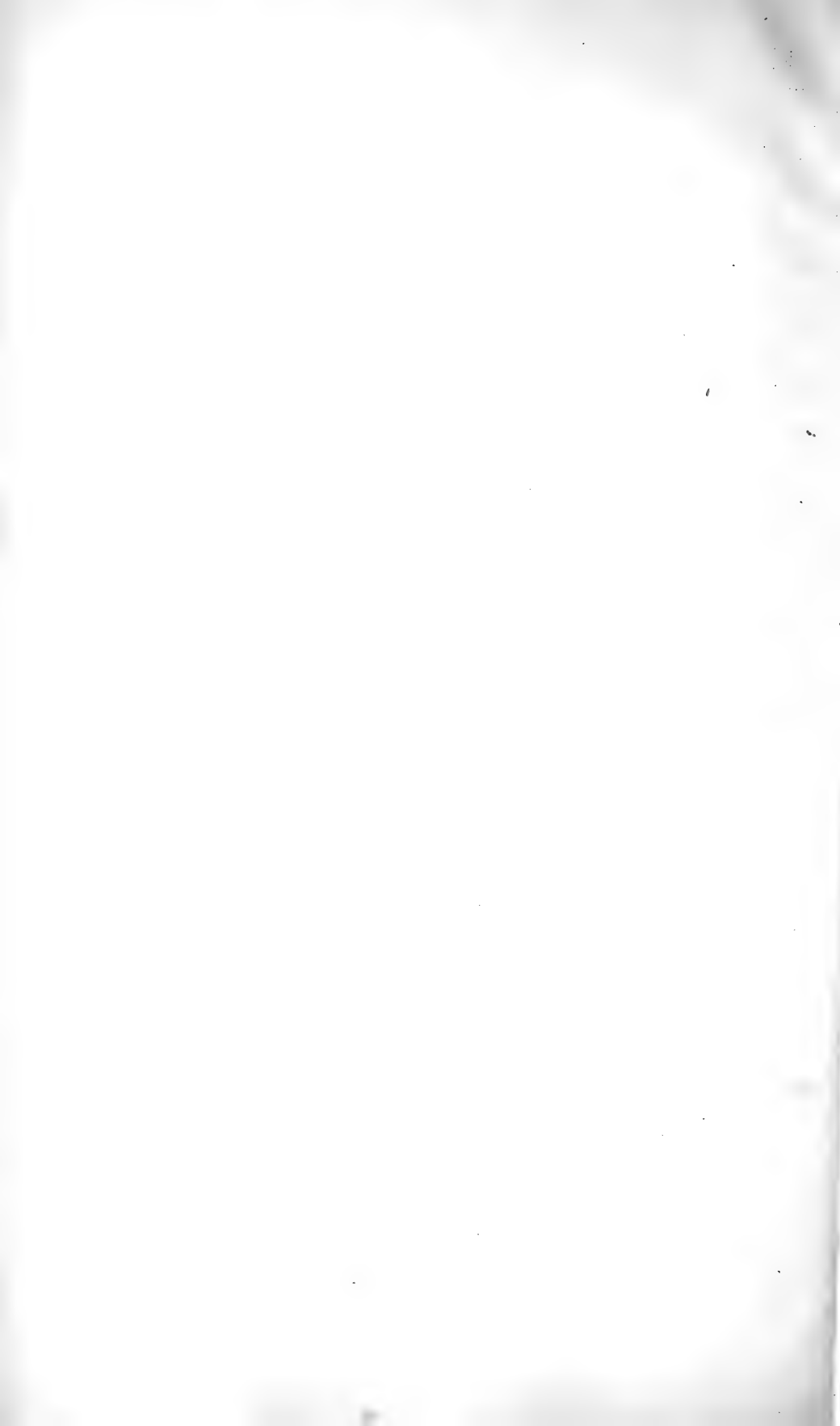
- B. ovata* (*Oliver*). Multicaule, caulibus erectis di- trichotomis cum foliis crispule pubescentibus, foliis parvis caulinis ovatis ovato-lanceolatisve obtusiusculis breviter petiolatis, floribus in nodis solitariis brevissime pedunculatis decurvis, corollæ tubo brevissimo, laciniis limbi anguste lineari-attenuatis apice incurvis cohærentibus extus scabride puberulis, coronâ stamineâ lobis exterioribus brevibus basi subquadratis divaricatim bifidis, interioribus integris ovatis obtusis.

A native of the Province of Colesberg, in South Africa, figured from specimens sent by Mr. Arnott, which flowered in the Royal Gardens, Kew, in April, 1868.

Tuber napiform, depressed, cinnamon-coloured, four to five inches in diameter. *Annual stems* eight to twelve inches high, two to four times forked or occasionally trichotomous, rather thinly clothed with short crisp pubescence. *Leaves* a third to a little over half an inch in length, ovate-lanceolate or ovate, crisply pubescent or subscabrid, with a very short *petiole*. *Peduncles* recurved, not exceeding a line in length. *Calyx* 5-partite, half a line long, crisply hairy externally, the segments linear-subulate. *Corolla* 5-partite, the segments narrow-linear, incurved and cohering at the tip, united at the base in a very short annulus. *Corona* double; the five outer segments bifid, with divaricate cusps; the five inner ovate, entire, blunt, inflexed over the stigma.

TAB. 226.—1, flower, complete; 2, the same, with corolla taken away; 3, pair of pollen-masses; all magnified.—*D'Oliver*.

For the opportunity of figuring this very interesting and curious Asclepiadeous plant I am indebted to the Royal Botanic Garden at Kew. The large tuber from which the branches spring, and the cage-like arrangement of the petals enclosing the parts of fructification, give the plant a very quaint and unusual appearance; but among the plants of South Africa the diversity of form is so great that unusual appearances are rather the law than any exception to it.—*W. W. S.*



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W.H. Fitch del. et lith.

J.N. Fitch imp.

Siphocampylus crenatifolius, Pohl.

TAB. 227.

Natural Order LOBELIACEÆ.

Tribe LOBELIÆÆ.

Genus SIPHOCAMPYLUS, Pohl.

- S. CRENATIFOLIUS (Pohl, Bras. ii. p. 107, t. 170). Fruticosa parce ramosa, ramis griseo-puberulis, foliis oblongis viridibus subacutis irregulariter subtiliter crenatis precipue infra breviter griseo-pubescentibus basi cuneatis breviter petiolatis, pedicellis folio dimidio fere brevioribus, calycis tubo campanulato lobis linearibus falcatis, corollâ calyce quadruplo excedente tubo glabro leviter curvato superne ventricoso, dentibus tubo 3—4-plo brevioribus linearibus falcatis subæqualibus, genitalibus flore subæquantibus, antheris inferioribus barbatis. — *D.C. Prodr.* vii. 403. *Lobelia crenata*, Presl, *Lobel.* p. 37.

A native of Brazil.

An erect sparingly-branched shrub, two or three feet high, with finely gray-downy branches. *Leaves* herbaceous in texture, pale green, finely gray-downy principally beneath, oblong, subacute, finely irregularly crenate, the base cuneate, subentire, the largest five to six inches long, an inch and a half to two inches broad at the middle, with a *petiole* not more than half an inch long, the upper subsessile. *Pedicels* solitary from the axils of the upper leaves, an inch to two inches long, slender, ebracteate. *Calyx* half an inch deep, slightly downy, the falcate linear teeth much exceeding the campanulate tube. *Corolla* two inches long; the bright red tube suddenly dilated a little above the base, slightly curved, ventricose upwards; the linear, falcate, yellowish, subequal teeth about half an inch long. *Style* and *anthers* finally just exerted, the two outer anthers bearded at the point.

TAB. 227.—1, flower, with upper part of corolla taken away, magnified.
—J. G. B.

I am indebted to the exertions of Mr. Weir, who found this very ornamental and free-growing species of *Siphocampylus* in Brazil, for my stock of the plant. It requires to be grown in a warm greenhouse, and thrives in a mixture of turfy loam and peat, being allowed plenty of pot-room, and a liberal supply of water at all times. It is easily increased by cutting or divisions of the roots.—W. W. S.

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W.H.Fitch, del. et lith.

J.N. Eitch imp.

Salvia elegans, Vahl.

TAB. 228.

Natural Order LABIATÆ.

Tribe MONARDEÆ.

Genus SALVIA, Linn.

Section CALOSPHECE, Benth.

- S. ELEGANS (Vahl. Enum. i. 238). Fruticosa, erecta, ramis gracilibus glabris vel sursum griseo-pubescentibus, foliis petiolatis ovatis acutis dentatis utrinque viridibus haud rugosis glabris vel precipue infra griseo-pubescentibus, floralibus sessilibus ovato-lanceolatis deciduis, verticillastris laxis, inferioribus 5—6-floris, pedicellis brevibus, calycis nervatis inconspicue griseo-pubescentis labiis subæqualibus deltoideis, superiore subintegro vel tridentato, inferiore semper bidentato, corollæ coccineæ tubo cylindrico vix arcuato extus pubescente, labio inferiore deflexo superiore paulo brevior, genitalibus exsertis. — *Benth. in D.C. Prodr.* xii. 342. *S. incarnata*, Cavan. Ann. Cienc. Nat. ii. 112; *H. B. K. Nov. Gen.* ii. 293, t. 144.

A native of Mexico and Guatemala.

An erect copiously-branched shrub two or three feet high. *Branches* slender, tetragonous, glabrous or upwards more or less densely clothed with firm spreading gray hairs. *Leaves* green on both sides, paler beneath, herbaceous, not rugose, ovate, rounded at the base, acute, finely toothed, glabrous on both sides in our specimens, but often more or less densely clothed with gray pubescence, especially beneath. *Petioles of lower leaves* twelve to eighteen lines long. *Flowers* in copious lax racemes six to twelve inches long; only the lowest pair of *bracts* leaf-like, the upper sessile, ovate-lanceolate, soon deciduous. *Lower whorls* five- to six-flowered. *Pedicels* slender, subglabrous, under a line long. *Calyx* tubuloso-campanulate, two lines long, distinctly nerved, finely pubescent; the two lips deltoid, subequal, the upper entire or shortly three-toothed, the lower distinctly two-toothed. *Corolla* an inch long, deep crimson, densely pubescent; the tube cylindrical, nearly straight; the upper lip two lines deep, the lower rather shorter, deflexed, faintly three-toothed. *Stamens* and *style* exserted.

TAB. 228. — 1, flower complete; 2, stamens; 3, anther; 4, pistil; 5, ovary, viewed in front; 6, ovaries, viewed laterally: all magnified. — J. G. B.

This is one of the most useful species among the numerous fine *Salvias* from Mexico for conservatory decoration. It flowers freely during the winter and early spring months, when its numerous crimson-scarlet blossoms are sure to excite attention. It thrives and flowers freely under warm greenhouse treatment, grown in a mixture of turfy loam enriched with well-decayed manure. It is easily propagated by cuttings.—*W. W. S.*

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W.H. Fitch del. et lith.

J.N. Fitch imp.

Salvia Goudotii Benth.

TAB. 229.

Natural Order LABIATÆ.

Tribe MONARDEÆ.

Genus SALVIA, Linn.

Section CALOSPHERE, Benth.

S. GOUDOTII (Benth. in D. C. Prodr. xii. 339). Fruticosa, erecta, ramis gracilibus sursum griseo-puberulis, foliis petiolatis ovatis acutis dentatis basi cuneatis utrinque viridibus haud rugosis subglabris vel precipue infra breviter griseo-pubescentibus, floralibus lanceolatis vel subulatis deciduis, verticillastris laxis, inferioribus 5—8-floris, pedicellis brevibus, calycibus nervatis inconspicue griseo-puberulis labiis subæqualibus, superiore integro, inferiore bidentato, corollæ coccineæ extus pubescentis tubo e calyce paululum exserto sursum ventricoso, labiis subæqualibus tubo triplo brevioribus, inferiore amplo tridentato, staminibus haud exsertis, stylo barbato demum paululum exserto.—*S. lantanifolia*, Hort. Linden non Mart. et Gal.

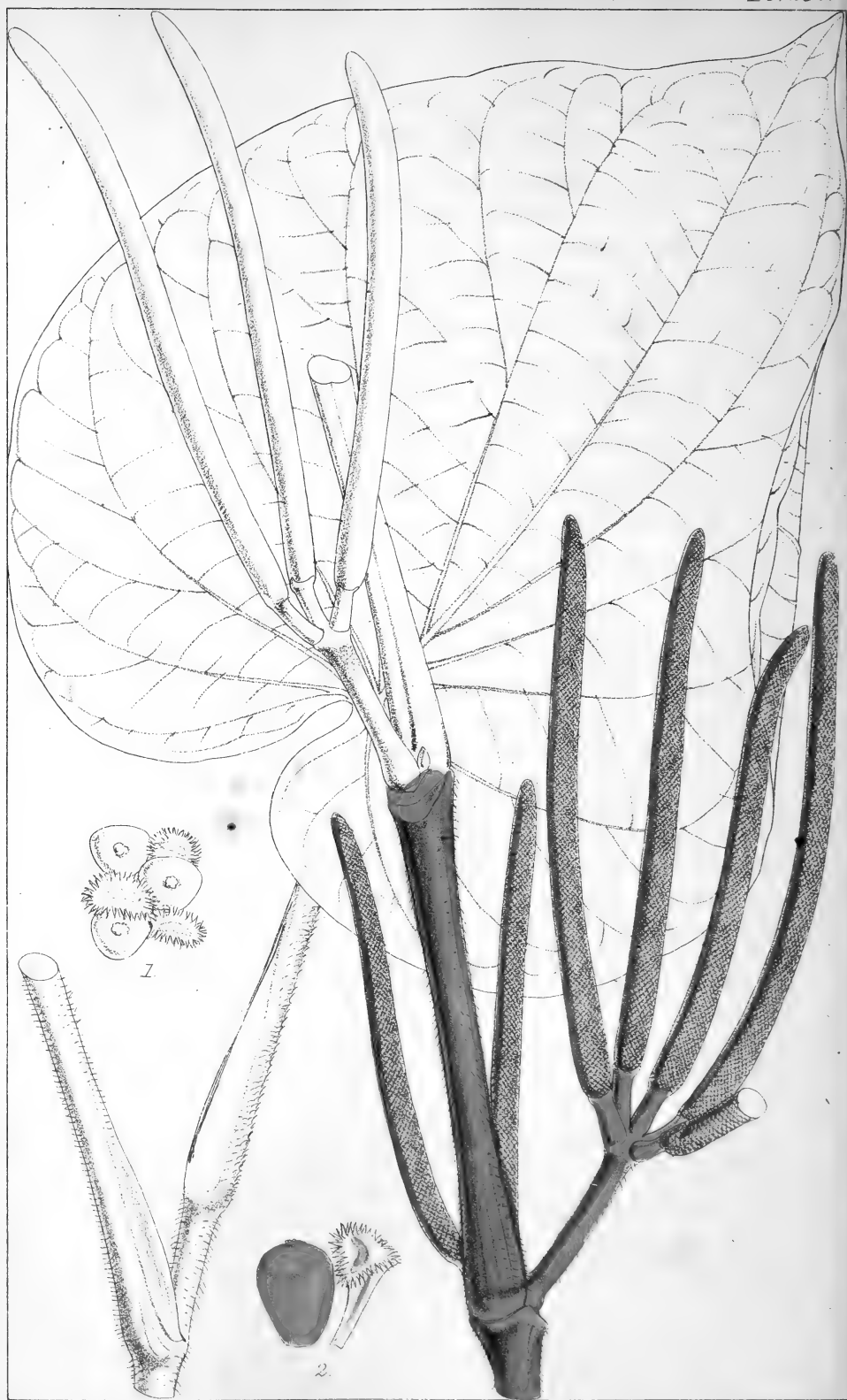
A native of New Granada.

An erect shrub two to three feet high, with slender tetragonous branches finely gray-downy upwards. Leaves green on both sides, paler beneath, herbaceous in texture, not rugose, ovate, acute, cuneate and subentire at the base, finely toothed upwards, glabrous on both sides or finely gray-downy, principally beneath, shortly petiolate. Lower bracts lanceolate; upper subulate, deciduous. Flowers in copious lax racemes, the lower whorls five- to eight-flowered. Pedicels very short, finely gray-downy. Calyx five to six lines deep, tubular, prominently nerved, slightly downy, the lips reaching a third of the way down, the upper entire, the lower bifid. Corolla twelve to fourteen lines long, bright crimson, densely pubescent externally; the tube about half as long again as the calyx, ventricose after leaving it; the lips subequal, four lines deep, the lower deeply three-lobed, with the lower lobe broader than deep and distinctly emarginate. Stamens concealed in the upper lip. Style pubescent, with the stigma finally exserted.

TAB. 229.—1, flower complete, viewed in front; 2, the same, viewed from the side; 3, stamens; 4, pistil: all magnified.—J. G. B.

This pretty species of *Salvia* is sometimes found in collections under the name *lantaniifolia*. I am indebted to the Royal Botanic Gardens at Kew for my plants. The species requires the same treatment as *Salvia elegans* (Tab. 228), and is well worthy of a place in the conservatory, its pleasing bright purple flowers producing a pretty effect.—*W. W. S.*

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W.H. Eitch, del. et lith.

J.N. Eitch, imp.

Piper umbellatum, Linn.

TAB. 230.

Natural Order PIPERACEÆ.

Genus PIPER, Linn.

Section POTHOMORPHE (*Miquel*). Stamina 2 vel 3 quorum 1 posticum, antheris articulatis. Flores hermaphroditi vel unisexuales. Amenta axillaria, solitaria vel ad apicem ramuli axillaris umbellata.—*Cas. D. C. in D. C. Prodr.* xvi. 331.

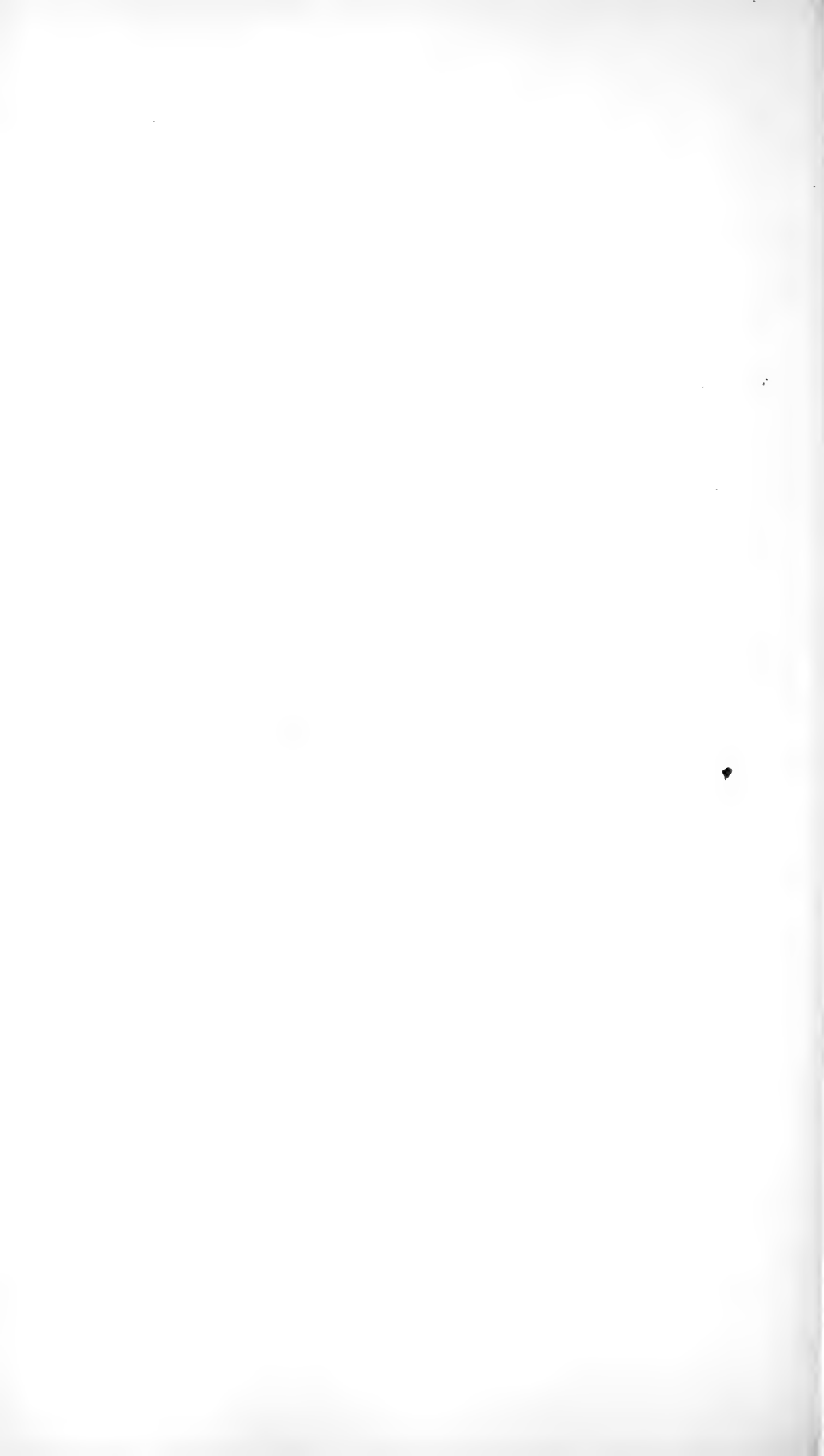
P. UMBELLATUM (*Linn. Sp. Plant.* p. 43). Foliis longe petiolatis rotundatis profunde cordatis membranaceis supra viridibus glabris infra pallidioribus ad venas griseo-puberulis, venis utrinque costam 5—6 ex apice petioli et 1 ex costâ ipsâ radiantibus, amentis 2—6 in umbellâ breviter pedunculatâ dispositis, pedicellis brevibus gracilibus, bracteæ limbo semilunari ciliato, ovario turbinato.—*Pothomorphe umbellata, Miquel, Piper.* p. 208.

Widely spread in Tropical America.

Stems attaining a length of several feet, three to four lines thick, scarcely woody, terete, multisulcate, finely gray-downy upwards. *Petioles* of lower leaves six to nine inches long, stout, finely downy, hollowed out vertically at the base, with a fleshy wing on each side. *Leaves* round, deeply cordate, attaining more than a foot in breadth each way, cuspidate, entire, membranous and flaccid in texture, green and glabrous above, paler and inconspicuously downy beneath; the midrib distinct from the base to the apex; five or six main veins on each side, radiating from the apex of the petiole, and generally only one on each side branching from the midrib above the base. *Peduncles* stout, an inch or less long. *Spikes* on short slender pedicels, two to six in an umbel, three to four inches long; the *flowers* very dense; the *limb of the bracts* ciliated; the *ovary* turbinate, glabrous.

TAB. 230.—1, portion of flower-spike; 2, bract, with pistil: both magnified.—*J. G. B.*

I received this fine species of *Piper* from Vera Cruz with a consignment of Orchids. When grown freely in a moist shady stove it makes a fine effect by its large, bright green, cordate leaves, which are abundantly produced. It delights in plenty of water, and should be potted in turfy loam and peat, with good drainage below. It is increased by cuttings and seeds.—*W. W. S.*



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J.N. Fitch, imp.

Euphorbia geniculata, Ortega.

TAB. 231.

Natural Order EUPHORBIACEÆ.

Genus EUPHORBIA, Linn.

Section POINSETTIA (Graham).

E. GENICULATA (Ortega, Dec.) p. 16. Annuæ 1—3-pedalis, dichotomiter ramosa, caulibus glabris vel sursum setulosis, foliis oppositis petiolatis oblongo- vel obovato-lanceolatis acutis subintegris vel dentatis basi angustatis membranaceis supra viridibus glabris infra pallidioribus glabris vel ad venas inconspicue pubescentibus, floralibus sæpe albido variegatis, capitulis in cymis densis copiosis dispositis, pedicellis perbrevibus, involucris turbinatis, glandulis integris rotundatis, capsulis lævibus, stylis bifidis, seminibus carinatis granulosis. —Boiss. in *D. C. Prodr.* 15 part, ii. p. 72. *E. prunifolia*, Jacq. Hort. Schoen. iii. t. 277. *Poinsettia frangulæfolia*, *geniculata*, *Ruiziana*, and *prunifolia*, Klotzsch et Garcke Tric. p. 101—4.

A very variable plant, widely distributed through Tropical America, which ought probably to be regarded as only a variety of *E. heterophylla*, Linn.

An annual, one to three feet high, with erect glabrous or subglabrous stems more or less branched dichotomously. Leaves opposite, distinctly petiolate, oblong- or obovate-lanceolate, two to four inches long, nine to eighteen lines broad at the middle, acute, subentire or finely toothed, narrowed at the base, membranous in texture, full green and quite glabrous above, glaucous beneath, and glabrous or inconspicuously hairy on the main veins. Floral leaves often variegated with white. Heads in dense terminal cymes, with very short pedicels. Involucre turbinate, a line deep; the glands horizontal, roundish, entire. Capsule smooth, two and a half lines broad by about half as deep, conspicuously three-lobed; the styles deeply bifid; the seeds finally black, finely granulated, with an acute keel.

TAB. 231.—1, head of flowers complete; 2, vertical section of the same; 3, stamen, with pedicel; 4, bract: all magnified.—J. G. B.

A very weedy-looking plant, obtained by chance seeds in soil sent from Bahia by Mr. E. Reed. It appears to require stove treatment, and to seed freely, like most other annual plants.—W. W. S.



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21.



W.H. Fitch, del. et lith.

J.N. Fitch, imp.

Haworthia subregularis, Baker.

TAB. 232.

Natural Order LILIACEÆ.

Tribe ALOINEÆ.

Genus HAWORTHIA, Duval.

- H. SUBREGULARIS (Baker). Acaulis, foliis circiter 30 in rosulam dense confertis, ovato-lanceolatis acutis uncialibus et ultra $2\frac{1}{2}$ -plo longioribus quam latis, facie subplanis dorso convexis carinatis pallide viridibus vittis verticalibus 5—6 saturationibus notatis, supra prope apicem et infra in dimidio superiore punctis parvis rotundatis granulatis, marginibus et carinâ denticulatis, pedunculo semipedali, racemo 12—18-floro subæquante, bracteis lanceolatis cuspidatis pedicellis erecto-patentibus æquantibus, perianthio albo viridi-vittato segmentis ligulatis subregulariter falcatis tubo dimidio brevioribus.

A native of Cape Colony, gathered by Mr. Cooper.

Leaves about thirty in a dense sessile tuft more than two inches across and rather over an inch high, ovate, narrowed from the middle to a broad base and gradually upwards to an acute point, when fully developed fifteen lines long by half an inch broad, a quarter of an inch thick in the middle, the face nearly flat, the back rounded and rather sharply keeled, mottled towards the tip on the face and half-way down the back with distinct small white granules, the rest of the surface a pale glaucous green, but the colour deeper between the spots and both sides with about half-a-dozen darker vertical ribs. *Peduncle* five to six inches long exclusive of the raceme. *Bracts* three to four lines long, lanceolate-cuspidate, equalling the erecto-patent pedicels. *Perianth* eight to nine lines long, pure white with green ribs; the divisions subequal, and nearly regularly falcate when expanded, half as long as the tube.

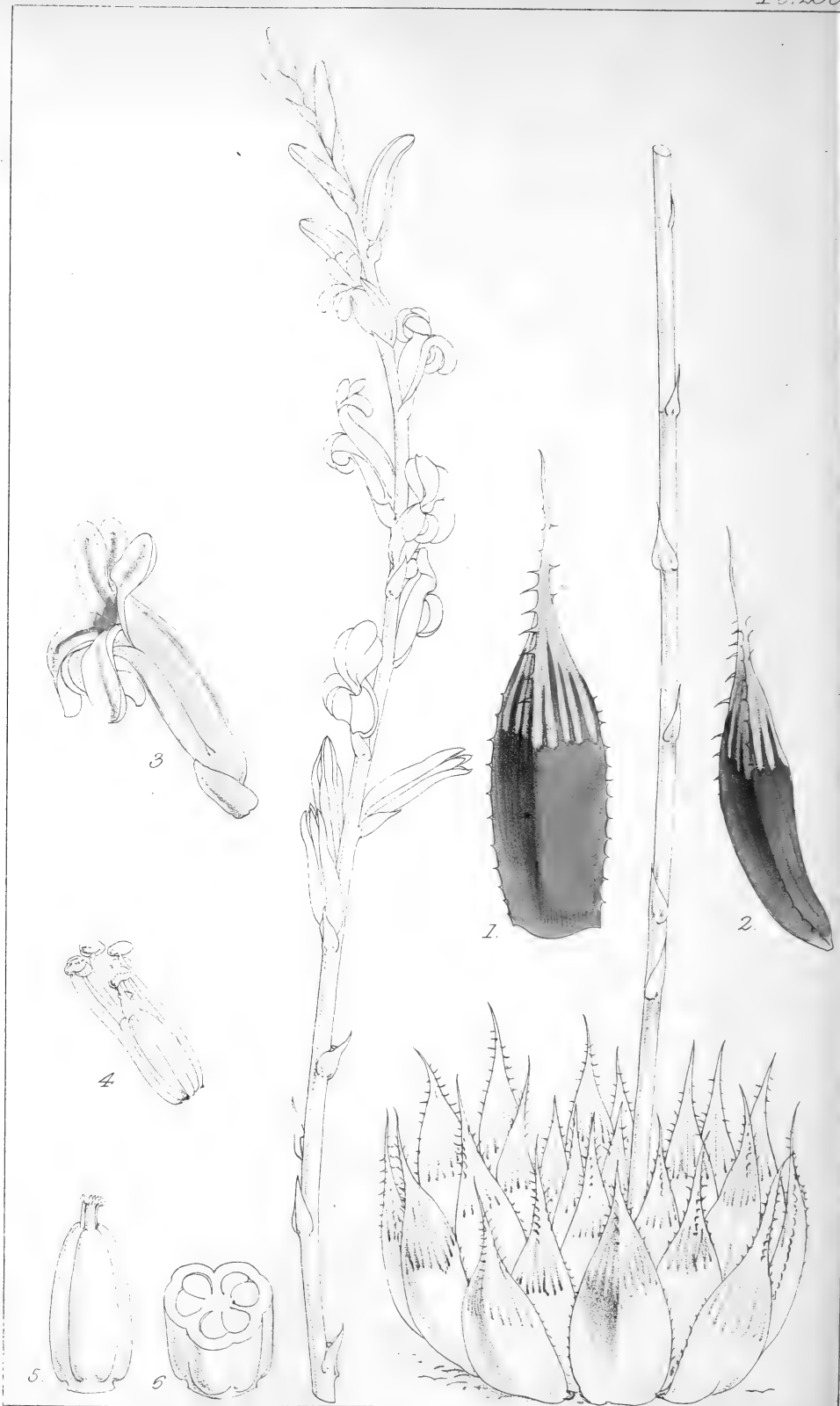
Nearest *H. latevirens*, Salmdyck, section 10, fig. 3, in habit, and remarkable in the genus for the nearly regular limb of the perianth, in which it approximates to *Apicra*.

TAB. 232.—1, leaf viewed from the back; 2, leaf viewed from the side: both natural size. 3, apex of leaf; 4, flower complete; 5, stamens and pistil; 6, pistil: all magnified.—J. G. B.

In this and the two following species of *Haworthia* (Tabs. 233 and 234) will be found nearly allied plants, but with differences which up to the present time have been considered specific. Under cultivation they are easily distinguishable, and

their differences remain constant. Such plants as these can only be well studied in the growing state: dried for the herbarium their characters vanish. This species and those of the section of *Haworthia* with translucent apices to the leaves, are delicate, and require much care in their cultivation to keep them in health. They should be grown in small pots, with plenty of drainage. The soil should be a light sandy loam with a little peat. Water should be given sparingly to the plants in winter, when if necessary, and always if convenient, they should be kept near the glass, taking care to shade them from the mid-day sun in summer. They are slowly increased by offsets and by seeds, which sometimes ripen. The species figured I received from South Africa, there collected by Mr. Thos. Cooper.—*W. W. S.*

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W. H. Fitch del. et lith.

J. N. Fitch imp.

Haworthia Cooperi, Baker.

TAB. 233.

Natural Order LILIACEÆ.

Tribe ALOINEÆ.

Genus HAWORTHIA, Duval.

H. COOPERI (Baker). Acaulis, foliis 30—40 pro genere haud crassis in rosulam dense confertis oblongo-lanceolatis sesquiuncialibus triplo longioribus quam latis longe aristatis pallide viridibus utrinque convexis in tertio superiore pellucido-vittatis apice pellucido, ad marginem carinam et insigniter ad aristam setis pellucidis patentibus ciliatis, exterioribus ascendentibus, pedunculo pedali, racemo 10—12-floro modice denso, bracteis parvis deltoideis pedicellis perbrevis erecto-patentibus superantibus, perianthio albedo purpureo-vittato limbo distincte bilabiato tubo duplo brevior.

A native of Cape Colony, discovered by Mr. Cooper.

Leaves thirty to forty in a dense sessile rosette which is two to two and a half inches broad by fifteen to eighteen lines deep, oblong-lanceolate, narrowed a little between the middle and the base and gradually upwards from the middle into a long awn, not more than an eighth of an inch thick in the centre, very pale green, both faces slightly convex, the upper third on both sides marked with pellucid ribs, the tip and awn (which is three to four lines long) entirely pellucid, the edge, keel, and especially the awn ciliated with patent pellucid setæ. *Inner leaves* erect, *outer* ascending. *Peduncle* a foot long exclusive of the raceme. *Flowers* a dozen or more, moderately close. *Bracts* deltoid, two to three lines long, exceeding the very short erecto-patent pedicels. *Perianth* eight to nine lines long, white, with faint reddish streaks in the centre of the segments; the distinctly bilabiate limb half as long as the tube.

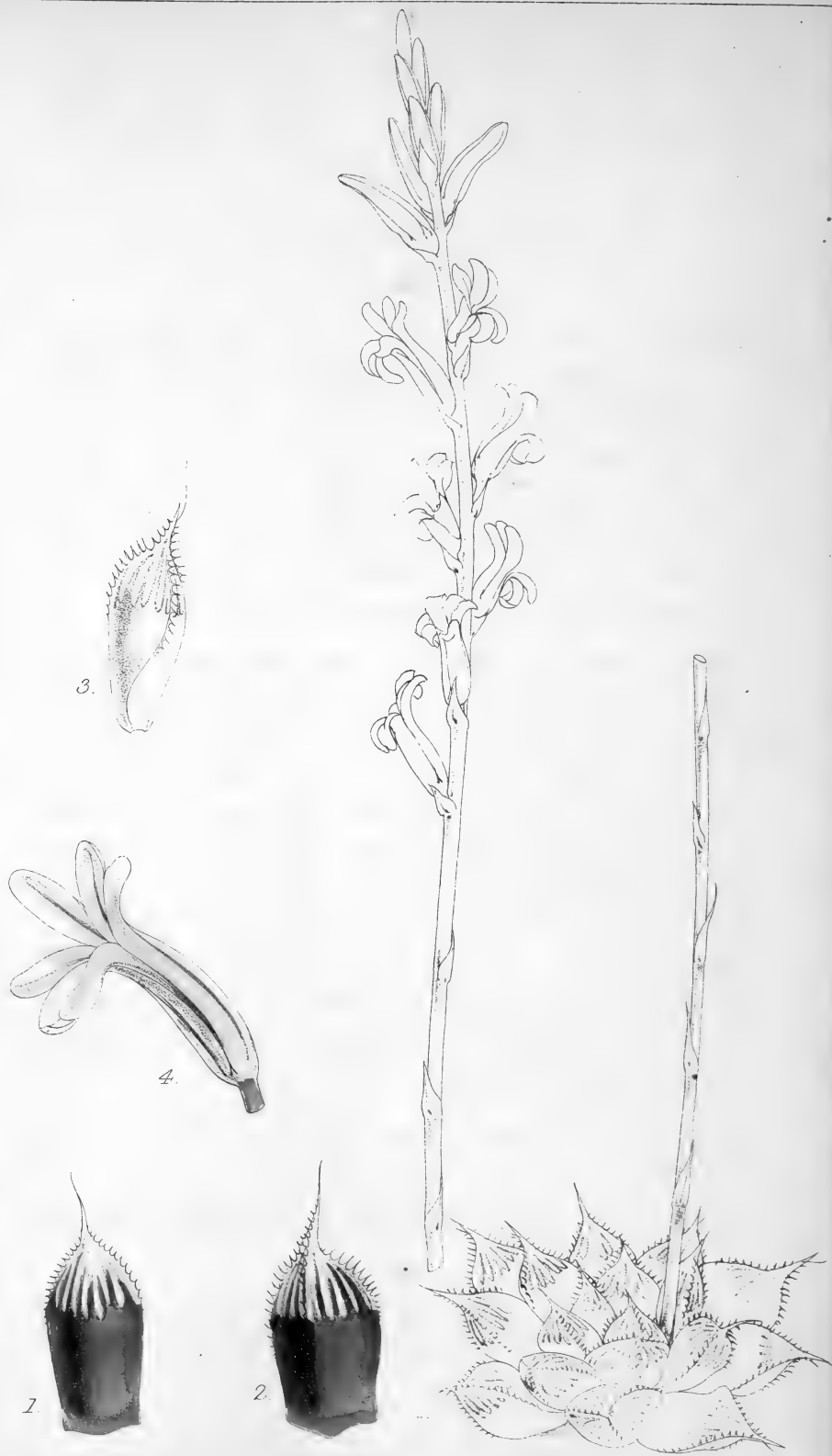
Intermediate between *H. translucens*, Haw., of the section *Setatæ* (Salm dyck, Mon. sect. 12, fig. 1) and *H. altilinea* var. *denticulata* (Salm dyck, sect. 11, Limpidæ, tab. 3 b).

TAB. 233.—1, leaf viewed from the back; 2, the same from the side; 3, flower complete, with bract; 4, stamens and pistil; 5, pistil; 6, horizontal section of fruit: all magnified.—J. G. B.

A South African species, discovered by Mr. Thos. Cooper, after whom Mr. Baker has named the plant, and who well deserves the compliment for the energy and zeal he evinced while acting as my collector in South Africa, and in sending to this country a large number of new and interesting plants. For treatment see Tab. 232.—W. W. S.



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W.H. Fitch, del. et lith.

J.N. Fitch, imp.

Haworthia pilifera, Baker.

TAB. 234.

Natural Order LILIACEÆ.

Tribe ALOINEÆ.

Genus HAWORTHIA, Duval.

H. PILIFERA (Baker). Acaulis, foliis 20—30 crassissimis in rosulam dense confertis, exterioribus patentibus oblongis vix uncialibus pilifero-aristatis e medio sursum ad basin aristæ cite angustatis pallide viridibus facie paullulum convexis, dorso rotundatis, utrinque per tertiam superiorem pellucido-vittatis, apice pellucido, ad marginem, carinam et precipue ad aristam setis pellucidis patentibus ciliatis, pedunculo semipedali, racemo 10—12-floro, bracteis parvis lanceolatis, pedicellis perbrevibus vel subnullis, perianthio albedo viridi vittato, limbo distincte bilabiato tubo duplo brevior.

A native of Cape Colony, discovered by Mr. Cooper.

Leaves twenty to thirty in a dense sessile rosette which is more than two inches broad but more than an inch deep, oblong, narrowed a little between the middle and the base, and suddenly from above the middle to the base of a long decidedly hair-like point, three to three and a half lines thick in the centre, the face slightly convex, the back round, the colour pale green, the upper third on both sides densely marked with pellucid ribs, the tip and awn (which is three to four lines long) entirely pellucid, the edge, keel, and especially the awn, ciliated with spreading pellucid setæ half a line long. *Inner leaves* erect, *outer* patent. *Peduncle* six to eight inches long exclusive of the raceme. *Flowers* ten to twelve, the upper sessile, the lower nearly so. *Bracts* lanceolate, three to four lines long. *Perianth* eight to nine lines long, white striped with green, the distinctly bilabiate limb half as long as the tube.

Closely allied to the last, but very different in the texture of the leaves.

TAB. 234.—1, leaf viewed in front; 2, the same from the back; 3, the same from the side: natural size. 4, flower complete, magnified.—*J. G. B.*

Another of Mr. Cooper's discoveries in South Africa, and received from him in the living state. It requires the same careful treatment mentioned Tab. 232.—*W. W. S.*

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W.H. Fitch del. et lith.

J.N. Fitch imp.

Scilla concinna, Baker.

TAB. 235.

Natural Order LILIACEÆ.

Tribe SCILLEÆ.

Genus SCILLA, Linn.

Section LEDEBOURIA (Roth).

S. CONCINNA (Baker). Bulbo ovoideo immerso, foliis 3—4 synanthiis carnosio-herbaceis loratis erectis dorso prorsus purpureo-maculatis racemo florifero paulo superantibus, racemo dense 20—30-floro sesqui- vel bipollicari, pedicellis erecto-patentibus, infimis floribus subduplo excedentibus, perianthio $2\frac{1}{2}$ lin. longo segmentis roseo-purpureis dorso viridi carinatis, filamentis segmentis distincte brevioribus, ovario stipitato basi discoideo ampliato.

A native of Cape Colony, gathered by Mr. Cooper.

Bulb ovoid, tunicated and entirely immersed. *Leaves* three or four, fleshy-herbaceous, developed at the same time as the flowers, erect, bright glaucous green, marked all over the back with spots of purple which are more numerous and confluent towards the base of the leaf, eight to nine inches long, eight to nine lines broad at the middle, narrowed to both ends, very concave on the face in the lower half. *Scape* firm, erect, five to six inches long exclusive of the raceme. *Raceme* oblong, dense, twenty- to thirty-flowered, an inch and a half to two inches long by twelve to fifteen lines broad when expanded. *Pedicels* all erecto-patent, the lowest four and a half to five lines long whilst the flowers remain. *Bracts* minute, deltoid. *Perianth* two and a half lines deep, spreading falcately from three-quarters of the way down when fully expanded; the divisions bright rose-purple, except a little green on the keel outside. *Filaments* much shorter than the segments. *Ovary* distinctly stipitate and the base discoid.

TAB. 235.—1, flower complete; 2, pistil; 3, horizontal section of ovary: all magnified.—*J. G. B.*

Many of the *Scillas* of the section *Ledebouria* have spotted leaves, but none are so remarkable for beauty in this respect as the species now figured. The numerous bright rose-coloured flowers, congregated in oval heads of blossom, also render the plant attractive. It succeeds and flowers regularly when grown in a light airy greenhouse, potted in decayed turfy loam and sand, with plenty of drainage. It requires but little water during the season of rest. Mr. Thos. Cooper sent me bulbs of this plant from South Africa.—*W. W. S.*

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W.H. Fitch del. et lith.

J.N. Eitch imp.

Dyckia brevifolia, Hort.

TAB. 236.

Natural Order BROMELIACEÆ.

Tribe TILLANDSIEÆ.

Genus DYCKIA (*Roem. et Schult. Syst. Veg.* vii. 1195). Flores hermaproditæ. Perianthium ad basin 6-partitum, segmentis exterioribus brevioribus sepaloideis ovato-lanceolatis, diutine erectis, interioribus spathulatis corollinis limbo concavo lato flore expanso subpatulo. Stamina 6, æqualia, hypogyna, filamentis applanatis ligulatis subvalvatis, perianthio brevioribus vel æquantibus, antheris dorsifixis lineari-oblongis. Ovarium superum, sessile, oblongum, trisulcatum, ovulis in loculo pluribus; stylus brevis; stigma trilobatum. Capsula carnea, ovoidea, demum coriacea, septicide trivalvis. Suffrutices carnosocoriacæ brasilienses foliis rosulatis spinosodentatis floribus speciosis spicatis bracteis concavis persistentibus.

D. BREVIFOLIA (*Hort.*) Foliis 20—30 dense rosulatis lanceolatis quadruplo longioribus quam latis e basi ad apicem acutum sensim attenuatis glaberrimis crassis rigidis facie subplano saturate viridi dorso convexo crebre albo et viridi striato, interioribus erectis, exterioribus falcatis, spinis marginalibus pro genere parvis, pedunculo foliis 2—3-plo excedente, spica simplici subpedali 30—40-flora, bracteis lanceolatis acuminatis flore brevioribus, perianthii segmentis interioribus saturate flavis limbo semicirculari apiculato exterioribus sesqui longioribus, staminibus perianthio distincte brevioribus.

A native of Brazil.

Leaves densely aggregated in cæspitose sessile rosettes, twenty to thirty to a rosette, lanceolate, the young ones of the centre erect, the outer ones recurved, when fully mature about four inches long, an inch broad at the base, tapering gradually upwards to an acute point, a quarter of an inch thick in the lower part, rigid in texture; the face bright green, nearly flat; the back convex, marked with very fine distinct vertical stripes of green and white; marginal spines cartilaginous, scarcely over half a line long. *Peduncle* two to three times exceeding the leaves, furnished with several scariose lanceolate flowerless bracts. *Spike* about a foot long, an inch and a half broad when expanded, with thirty to forty flowers. *Bracts* scariose, lanceolate-acuminate, three to six lines long. *Sepaloid segments of the perianth* three to four lines long; *petaloid* half as long again, bright yellow, with a semicircular concave apiculate limb. *Stamens* considerably shorter than the perianth.

TAB. 236.—1, flower complete; 2, vertical section of flower; 3, a single stamen; 4, pistil; 5, horizontal section of ovary.—*J. G. B.*

A rare and interesting species of *Dyckia*, differing from any other I am acquainted with in its compact growth. It thrives in a moderately dry stove, grown in sandy peat in small pots. I obtained my plant from Mons. Louis de Smet, of Ghent. — *W. W. S.*





W.H. Fitch del et lith

J.N. Fitchamp.

Maranta arundinacea, Linn.

TAB. 237.

Natural Order CANNACEÆ.

Tribe MARANTEÆ.

Genus MARANTA, Linn.

- M. ARUNDINACEA (*Linn. Sp. Plant.* p. 2). Herbacea, glabrescens, dichotomiter ramosa, vaginis elongatis foliis æquantibus, foliis ovato-lanceolatis acutis papyraceis viridibus, floribus ad apicem ramorum solitariis vel paucis laxe racemosis, bracteis pedicellis elongatis apice articulatis arcte vaginantibus, perianthii segmentis exterioribus supra ovarium liberis lanceolatis scariosis persistentibus, interioribus petaloideis in tubo elongato coalitis limbo lanceolato, staminodiis exterioribus protrusis albis rotundatis emarginatis, interioribus genitalibus æquantibus.—*Roscoe, Monand.* t. 25.

The common arrowroot-yielding species of Tropical America.

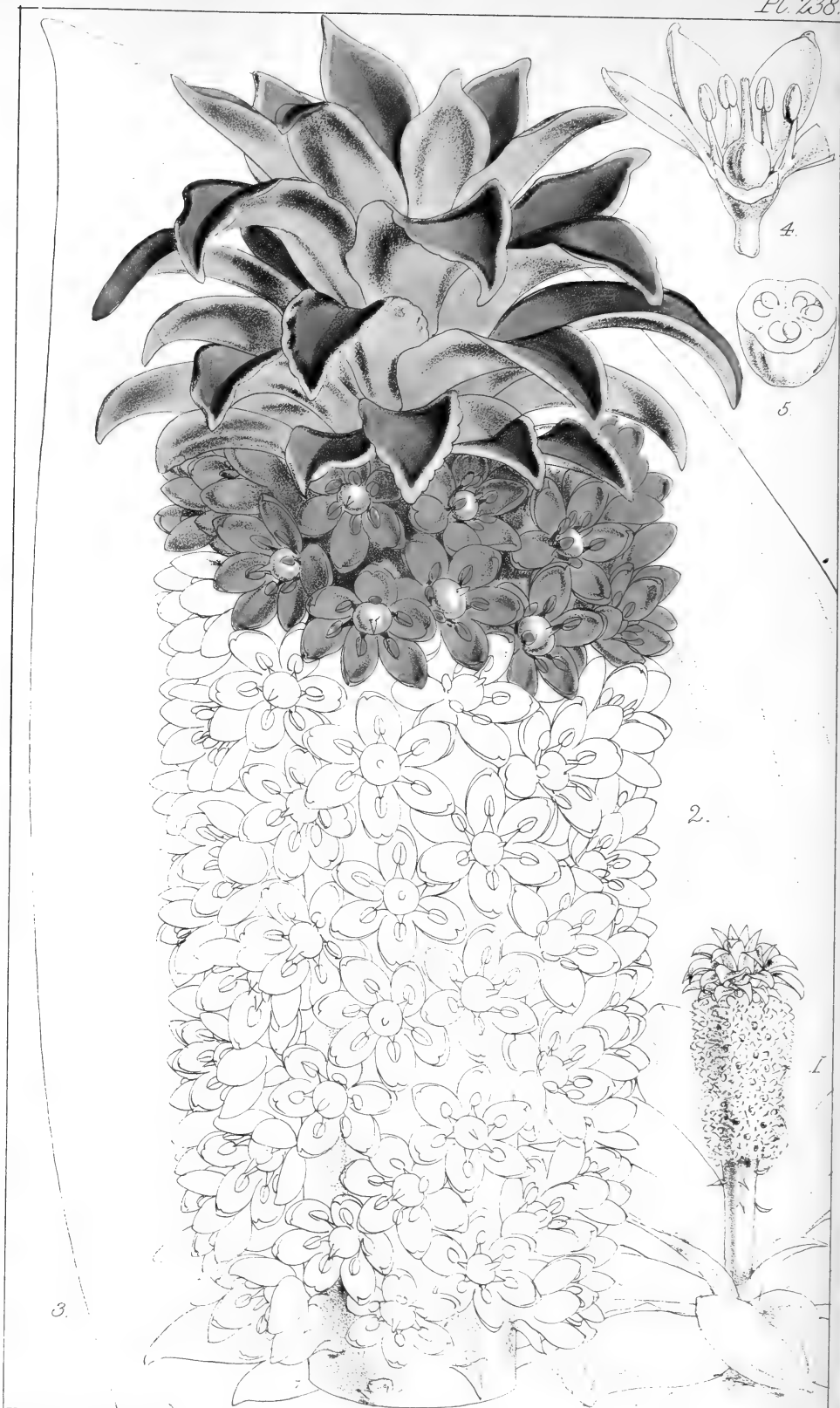
Herbaceous, erect, glabrous or sometimes a little pubescent at the upper nodes and on the under side of the leaves, attaining a height of six to ten feet, copiously branched dichotomously. *Sheaths* scariose, wrapped tightly round the slender stems, distinctly closely ribbed, contracted suddenly to a node at the apex of which the leaf is seated. *Leaves* ovate-lanceolate, acute, entire, papyraceous in texture, the lower ones six to twelve inches long, the upper surface green, the lower rather glaucous. *Flowers* solitary or in lax racemes at the apex of the branches. *Bracts* just like the leaf-sheaths in texture, twelve to eighteen lines long, wrapped tightly round the slender erecto-patent pedicels, which are articulated at the apex. *Ovary* minute, turbinate. *Outer divisions of the perianth* free, lanceolate, ribbed, scariose, persistent, six to eight lines long; *inner divisions* petaloid, fugacious, united in a cylindrical tube half an inch long, their limbs lanceolate, straight. *Outer staminodia* petaloid, protruded, round, emarginate; *inner staminodia* considerably shorter, one wrapped round the incurved style, and the other bearing the solitary one-celled anther on its margin.

TAB. 237. — 1, flower complete; 2, inner staminodia, with stamen and pistil; 3, the same, with part of that folded round the pistil cut away; 4, like the last, the staminode unrolled.—*J. G. B.*

An interesting plant, both as regards its resemblance to some of the broad-leaved grasses, and on account of its value in an

economical point of view, producing the common arrowroot of commerce. I obtained my specimens from Mons. Linden, of Brussels, who procured them from Rio Bianco. It requires the temperature of a moist stove, and grows vigorously in any rich light soil, if allowed plenty of pot room, and be supplied with water liberally during the growing season. It is increased by dividing the roots.—*W. W. S.*





W.H. Fitch, del. et lith.

J.N. Fitch, imp.

Eucomis clavata, Baker.

TAB. 238.

Natural Order LILIACEÆ.

Tribe SCILLEÆ.

Genus *EUCOMIS* (*L'Herit. Sert. Angl. t. 17*). Perianthium profunde 6-partitum segmentis uninerviis lanceolato-spathulatis subæqualibus flore expanso stellatim patentibus. Stamina 6, distincte perigyna; filamentis filiformibus æqualibus inclusis deorsum applanatis, antheris oblongis versatilibus. Ovarium sessile, ovoideum, ovulis in loculo pluribus; stylus erectus, filiformis: stigma capitatum. Capsula membranacea, globosa, profunde trisulcata, loculicide trivalvis, seminibus in loculo 3—6, haud compressis. Herbæ capenses bulbosæ racemosæ, scapo apice dense foliato, floribus numerosis viridibus.

E. CLAVATA (*Baker*). Foliis 9—12 late oblanceolatis acutis vel subobtusis pedalibus vel ultra planiusculis margine minute breviter ciliatis, scapo crasse clavato racemo dimidio brevior, racemo subdenso 50—80-floro 3 poll. crasso, pedicellis crassis brevissimis, coronæ foliis 20—25 lanceolatis floribus paulo excedentibus.

A native of Cape Colony, gathered by Mr. Cooper.

Leaves nine to twelve to the basal rosette, not at all blotched or spotted, spreading and fully developed when the flowers expand, the largest above a foot long by three to five inches broad two-thirds of the way up, hardly at all undulated towards the edge, acute or subobtuse, narrowed gradually from the middle to a broad base, the edge minutely ciliated. *Scape* clavate, three to four inches high before the flowers begin, twelve to fifteen lines thick at the top. *Raceme* moderately dense, fifty- to eighty-flowered, six to eight inches long by two and a half to three inches thick when developed. *Pedicels* very short and stout. *Perianth* half an inch deep, green within and without; the lanceolate-spathulate divisions connate, as in the other species, a little above the base. *Stamens* distinctly perigynous, not much over half the length of the segments. *Style* filiform, about as long as the ovary. *Coma* of twenty to twenty-five lanceolate leaves which exceed the flowers a little.

This has the clavate scape and short pedicels of *E. nana* (Bot. Mag. t. 1495) in combination with the leaves and stature of *E. regia*, Ait. In the perianth and stamens, these three species appear to correspond precisely with one another and with *E. punctata* and *undulata*. *E. bifolia*, Jacq., has only a pair of

leaves and the stamens united in a distinct cup, and in other respects quite agrees with the curious plant recently discovered by the Rev. H. Whitehead in Namaqualand, which Dr. Harvey characterised very shortly before his death ('Cape Genera,' 2 edit. p. 396) as a new genus, under the name of *Whiteheadia*.

TAB. 238. — 1, flower-spike, natural size; 2, whole plant, reduced; 3, upper part of leaf, natural size. 4, vertical section of a flower; 5, horizontal section of ovary: both magnified.—*J. G. B.*

A very fine species, with long, glossy, broad leaves, and producing an elongate closely packed head of green flowers, with a tassel of short ovate leaves at the apex. It grows freely, potted in rich turfy loam, in large pots, with plenty of drainage. The temperature of a cool greenhouse suits it well.—*W. W. S.*

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W.H. Fitch, del. et lith.

J N Fitch imp.

Albuca minor, Linn.

TAB. 239.

Natural Order LILIACEÆ.

Tribe SCILLEÆ.

Genus ALBUCA, Linn.

A. MINOR (Linn. *Sp. Plant.* p. 438). Bulbo ovoideo tunicis exterioribus sursum liberis membranaceis, foliis 5—6 anguste linearibus viridibus glabris carnosio-herbaceis, suberectis pedalis vel ultra facie concavis, scapo erecto foliis excedente, racemo 6—12-floro laxo thyrsoido, bracteis pedicellis ascendentibus multo brevioribus, floribus cernuis segmentis flavis late viridi-vittatis, staminibus alternis sterilibus. — *Willd. Sp. Plant.* ii. 100; *Bot. Mag.* t. 720; *Kunth, Enum.* iv. 374.

A native of the Cape of Good Hope.

Bulb ovoid, twelve to fifteen lines thick, the outer coats membranous round the base of the stem. *Leaves* five or six, cotemporary with the flowers, narrow-linear, fleshy-herbaceous, suberect, a foot or more long when fully developed, three to six lines broad in the lower half, bright green, glabrous, very concave on the face. *Scape* firm, erect, slender, terete, twelve to eighteen inches long exclusive of the raceme. *Raceme* narrow-thyrsoid, six- to twelve-flowered, six to nine inches long when expanded, by three to four inches broad. *Bracts* lanceolate, membranous, four to six lines long. *Pedicels* ascending, the lower fifteen to eighteen lines long; the *flowers* cernuous. *Perianth* nine to twelve lines deep, the divisions bright yellow with a broad green keel, the outer four to four and a half lines broad, the inner paler, rather shorter, permanently connivent, with a reniform green papillose crest. *Stamens* nearly as long as the inner divisions, the three opposite the outer segments without anthers and twice hooked at the tip. *Style* obconic, triquetrous, papillose, equal to the oblong ovary.

TAB. 239. — 1, flower, with perianth stripped away; 2, inner segment of perianth, and a fertile stamen; 3, a staminode: all magnified. — J. G. B.

A plant long known to botanists, but requiring a good figure to point out its characters, which is my object in giving it a place in the 'Refugium.' It grows freely in any light sandy soil, and requires the protection of a frame or cool greenhouse. Mr. T. Cooper sent me bulbs of this plant from South Africa. — W. W. S.

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W.H. Fitch, del. et lith.

J.N. Fitchump.

Cyperus compressus, Linn.

TAB. 240.

Natural Order CYPERACEÆ.

Tribe CYPEREÆ.

Genus CYPERUS, *Linn.*

- C. COMPRESSUS (*Linn. Sp. Plant.* p. 68). Cæspitosa, glaberrima, foliis anguste linearibus graminoides culmo triquetro erecto plerisque brevioribus, bracteis 4—6 foliiformibus, umbellæ radiis 1—8 centralibus sæpe sessilibus exterioribus longe pedunculatis, umbellulis simplicibus vel compositis, bracteolis linearibus, spicis in fasciculo 3—6 valde compressis 6—12-plo longioribus quam latis utrinque 12—18-floris, glumis ovatis acuminatis viridibus nervatis ciliatis acute carinatis, achæniis nitidis castaneis obovoideis acute triquetris glumis 3—4-plo brevioribus, stigmatibus 3 filiformibus. — *Kunth, Enum.* ii. 23.

Diffused through the tropics all round the world.

Densely cæspitose, the whole plant quite glabrous. *Leaves* about half-a-dozen to a culm, all leaving the stem within a couple of inches of the base; the sheaths scariose; the blade linear, grass-green, four to six inches long, a line to two lines broad, narrowed gradually to the point. *Culm* erect, triquetrous, three to twelve inches long, varying greatly in robustness according to the place in which the plant has grown. *Bracts of the umbel* four to six, just like the leaves. *Rays of the umbel* one to eight, the central usually sessile, the outer long-stalked. *Umbellules* simple or again compound; the spikes usually three to six in a fascicle, with twelve to eighteen pairs of florets, much compressed, six to twelve lines long. *Glumes* ovate-acuminate, acutely keeled, a line long, green, inconspicuously ciliated. *Nut* obovoid, acutely triquetrous, chesnut-coloured, a third of a line long by about half as broad. *Stigmas* three, filiform, as long as the ovary.

TAB, 240, — 1, a pair of spikelets; 2, a single flower with its glume; 3, stamens and pistil; 4, a single stamen: all magnified.—*J. G. B.*

Very few of the tropical species of *Cyperus* have been drawn from the living plant, and I thought it therefore desirable to give a figure of this one, which is common and widely dispersed in the tropical world. I procured it from chance seeds sent in earth received from Bahia. It thrives in a warm greenhouse, grown in turfy loam and peat, and well supplied with water.—*W. W. S.*

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W.H. Fitch, del et lith.

J.N. Fitch, imp.

Pelargonium testaceum, *E. Meyer*.

TAB. 241.

Natural Order GERANIACEÆ.

Tribe PELARGONIEÆ.

Genus PELARGONIUM, L'Herit.

Section POLYACTIUM.

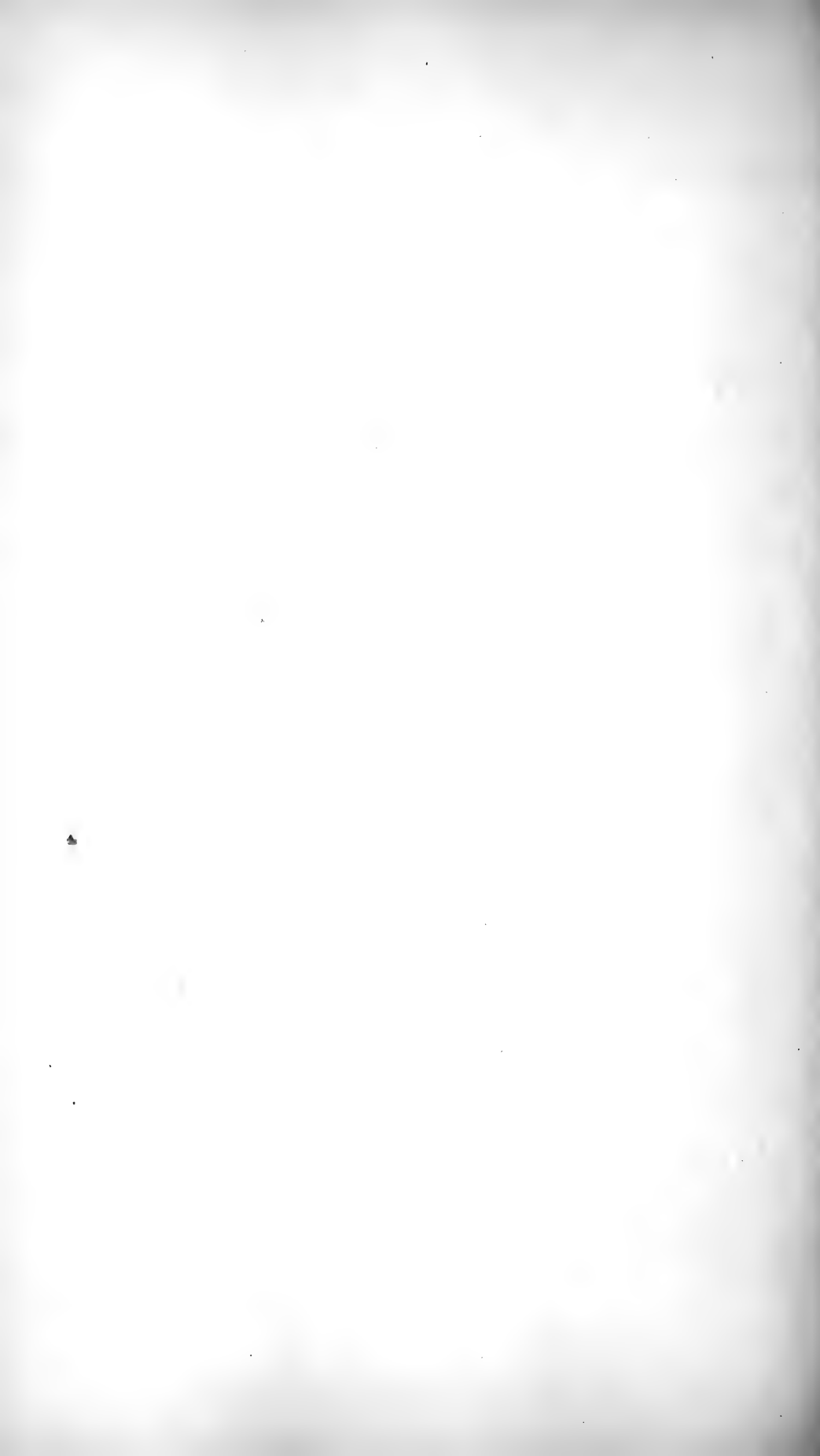
P. TESTACEUM (*E. Meyer in Herb. Drege*, No. 7507). Caule perbrevis vel subnullo, stipulis deltoideis, foliis petiolatis plerisque radicalibus rotundato-cordatis pinnatifidis herbaceis utrinque viridibus tenuiter griseo-pubescentibus, lobis contiguus obtusis dentatis, umbellis 8—12 floris, bracteis linearibus parvis, pedicellis puberulis calyce 4—6-plo longioribus, sepalis linearibus albo-marginatis, petalis obovatis calyce duplo excedentibus, lateralibus angustioribus, superioribus testaceis.—*P. pulverulentum*, *Harv. Fl. Cap.* i. 272, *ex parte*.

A native of the Cape, gathered by Mr. Cooper.

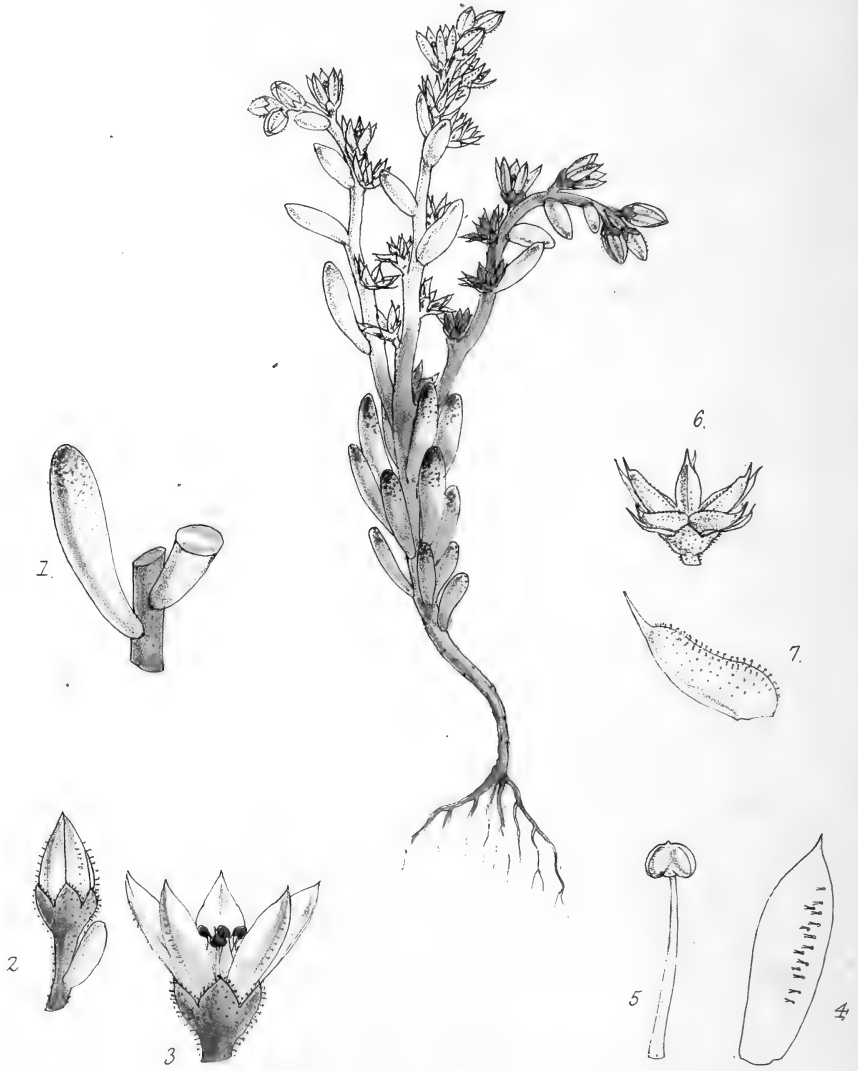
Root large, tuberous. *Stem* none or very short, erect, annual, pubescent. *Bracts* scariosæ, deltoid, two lines long. *Leaves* herbaceous in texture, rotundato-cordate, measuring three inches each way when fully developed, blunt, pinnatifid half or a third of the way down to the midrib, with contiguous toothed lobes; the upper surface pale green, inconspicuously hairy; the lower surface paler and rather more hairy. *Scape* six to nine inches long, erect, slender, thinly clothed with spreading gray silky hairs. *Umbel* 8- to 12-flowered, subtended by a whorl of scariosæ linear *bracts* two to three lines long. *Pedicel*, including the *calyx-spur*, twelve to eighteen lines long. *Calyx-lobes* linear, three lines long, finely pubescent on the back, ciliated on the edge, and furnished with a distinct white membranous border. *Petals* obovate, twice as long as the calyx, the lateral pair narrower than the other three, the two upper ones brick-red, the others nearly white. *Fertile anthers* six.

TAB. 241.—1, calyx with stamens and pistil; 2, single petal: both magnified.—*J. G. B.*

This dwarf species of *Pelargonium* was sent to me by Mr. Thos. Cooper from South Africa. It requires the protection of a warm greenhouse during the winter, and may be placed in the open air in the summer months, if protected from heavy rains. It will grow freely in a mixture of sandy loam and leaf-mould well drained, and watered but little during the season of rest.—*W. W. S.*



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TAB. 242.

Natural Order CRASSULACEÆ.

Genus SEDUM, Linn.

Sect. PROCRASSULA (*Griseb. Fl. Rum.* vol. i. p. 323). Stamina fertilia 5 ; epipetala abortiva vel sterilia. — *Aithales*, Webb. *Phyt. Can.* i. p. 178.

S. RUBENS (*Linn. Sp. Plant.* p. 619). Annua, glanduloso-pubescent, caulibus rubentibus erectis dichotomiter ramosis, foliis linearibus teretiusculis irregulariter confertis, cymarum ramis elongatis, floribus bracteatis subsecundo-spicatis, petalis rubello-albidis lanceolatis sepalis deltoideis quadruplo excedentibus, staminibus epipetalis abortivis, carpellis stellatim arcuato-patentibus. — *D.C. Prodr.* iii. p. 405. *Crassula rubens*, *Linn. Syst. Veg.* p. 253 ; *D.C. Plantas Grasses*, t. 55. *Aithales rubens*, Webb. *Phyt. Can.* loc. cit.

Distributed through the southern half of Europe, and extending also to Asia Minor and the Canaries.

Annual. The whole plant more or less tinged with red, and clothed with fine gray glandular pubescence. *Stems* erect, copiously branched when luxuriant, not more than three to four inches high. *Leaves* crowded, sessile, linear, erecto-patent, semicylindrical, six to nine lines long on the main stem, narrowed below the middle, pale glaucous-green, more or less tinged with red. *Flowers* in cymes with lax scorpioid subsecund branches two to three inches long. *Bracts* linear-oblong, two to three lines long. *Pedicels* very short or none. *Calyx* under half a line deep, very glandular, the lobes deltoid. *Corolla* an eighth of an inch deep, pinkish-white, the petals linear. *Inner row of stamens* entirely absent, so that technically the plant is rather a *Crassula* than a *Sedum*, and thus forms an interesting connecting-link between these two large genera. *Carpels* spreading like a star when mature, but curving upwards towards its circumference.

TAB. 242.—1, a single leaf ; 2, a bud ; 3, an expanded flower ; 4, a single petal ; 5, a stamen ; 6, calyx with mature carpels ; 7, a single sepal and carpel : all more or less magnified.—*J. G. B.*

A small hardy annual, well adapted for rock-work, producing seeds most freely. When grown as a pot-plant it makes a neat appearance, requiring sandy loam and a moderate supply of water to keep it in good health. I am indebted to my friend Mr. D. Hanbury, F.R.S., for seeds of this plant.—*W. W. S.*

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W.H. Fitch del. et lith.

J.N. Fitch imp.

Sedum Cepaea L.

TAB. 243.

Natural Order CRASSULACEÆ.

Genus SEDUM, Linn.

S. CEPÆA (Linn. *Sp. Plant.* p. 617). Annua, caulibus elongatis assurgentibus flexuosis, foliis applanatis obovatis obtusis integris rosularum petiolatis, caulinis sessilibus plerisque oppositis vel ternis, floribus copiose paniculatis, petalis albis lanceolatis acuminatis sepalis linearibus triplo longioribus.—*D.C. Prodr.* iii. p. 404. *S. galioides*, *All. Ped.* ii. p. 120, t. 65, fig. 3.

Spread all through the South of Europe from Spain to Asia Minor.

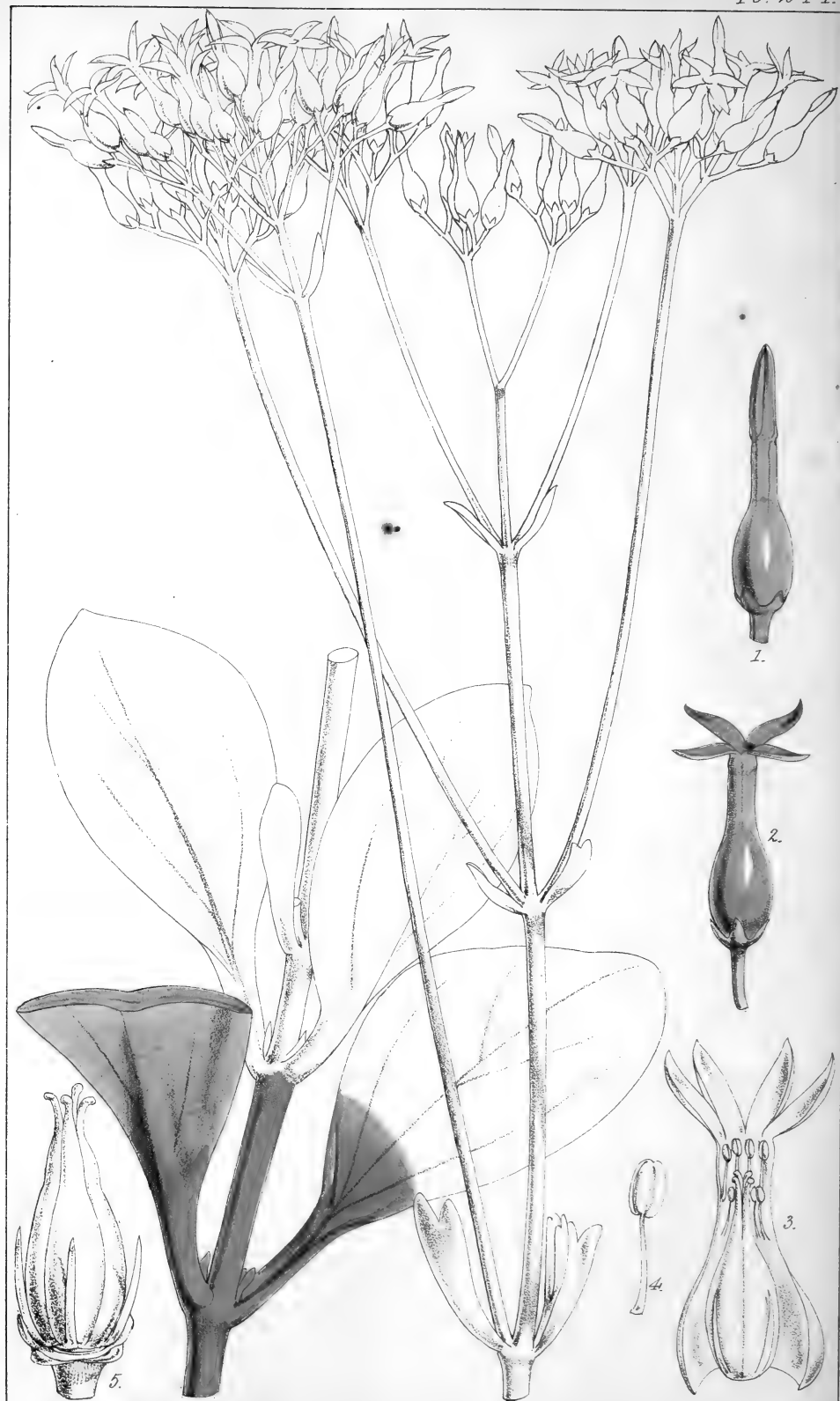
Root slender, fibrous, annual. *Stems* cæspitose, and a foot or more long when luxuriant, assurgent, flexuose, glabrous or pubescent. *Leaves* pale green, fleshy in texture, flattened on both sides; of the barren rosettes obovate, with a distinct petiole; of the stem narrower, mostly oblanceolate, often subacute, usually in opposite pairs or in threes, rarely scattered, twelve to eighteen lines long, sessile. *Flowers* in a copious panicle, the ultimate branches racemose or subcorymbose. *Pedicels* slender, one to three lines long, rarely bracteated. *Calyx* half a line deep, the *sepals* linear. *Corolla* white, an eighth of an inch deep, with five lanceolate acuminate *petals*. *Stamens* ten, nearly as long as the petals, the *anthers* pink. *Carpels* white, when mature as long as the petals. *Hypogynous scales* subquadrate, emarginate.

TAB. 243.—1, flower complete; 2, the same fully expanded; 3, an anther; 4, the carpels: all magnified.—*J. G. B.*

Another annual species of *Sedum*, of no floricultural interest. It is straggling in habit and seeds very freely. I find these annual *Sedums*, if placed in a proper position, will appear year after year, in or near the same spot, from self-sown seeds, and only requiring for their continuance that the young plants should not be rooted up as weeds. I am indebted to my friend the late Wm. Borrer, of Henfield, for the seeds of this plant.—*W. W. S.*



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W. H. Fitch, del. et. lith.

J. N. Fitch imp.

Kalanchoe rotundifolia, Haworth

TAB. 244.

Natural Order CRASSULACEÆ.

Genus KALANCHOE, *Adans.*

K. ROTUNDIFOLIA (*Haw. Phil. Mag.*, July 1825, p. 31). Glabra, erecta, bipedalis vel ultra, foliis obovato-spathulatis integris vel subcrenatis carnosius viridibus obtusis vel subobtusis breviter petiolatis, floribus copiose corymbosis, pedunculis et pedicellis strictis gracilibus, bracteolis linearibus minutis, sepalis parvis lanceolatis, corollæ tubo urceolato collo gracili, segmentis linearibus rubro-aurantiacis tubo triplo brevioribus. — *D.C. Prodr.* iii. p. 395; *Harv. Fl. Cap.* ii. p. 379.

A native of Cape Colony.

Stem erect, two feet or more high, terete, glabrous. *Leaves* in opposite pairs, the lower two to three inches apart, obovate-spathulate, a line thick in the middle of the blade, quite glabrous, entire in our specimens, full green above, pale green beneath, two and a half to three inches long, rather more than half as broad, blunt or obtusely pointed, narrowed into a short thick channelled *petiole*. *Flowers* in dense flat-topped or rather rounded corymbs, on long wand-like *peduncles*, which are bracteated by pairs of much reduced leaves. *Ultimate pedicels* slender, one to three lines long, with minute linear-subulate *bracteoles*. *Calyx* under a line deep, the lanceolate divisions reaching down to the base. *Corolla* lanceolate, six to seven lines long, the ventricose base of the tube equalling its slender neck, the divisions linear, patent, orange-red. *Carpels* reaching into the neck of the tube. *Hypogynous scales* subulate.

TAB. 244.—1, a closed flower; 2, an expanded flower; 3, a vertical section of a flower; 4, a stamen; 5, carpels and hypogynous scales: all magnified.—*J. G. B.*

Grown in a warm rather moist stove, this species of *Kalanchoe* makes a neat dwarf plant, and produces its red-orange flowers freely. Sandy loam and peat, with plenty of drainage, is the soil which seems to suit it best. When growing it should be kept near the light, and be then freely watered; but when at rest the water must be very sparingly given. It is easily increased by seed or by the leaves, which root freely inserted in sand.—*W. W. S.*



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W.H. Fitch, del. et. lith.

J.N. Fitch, imp.

Begonia Putzeysiana, A.D.C.

TAB. 245.

Natural Order BEGONIACEÆ.

Genus BEGONIA, *Tourn.*Section LEPSIA, *A. D. C.*

- B. PUTZEYSIANA (*A. D. C. Prodr.* xv. p. 375). Fruticosa, ramosissima, glabra, stipulis lanceolatis scariosis, foliis imbricatis brevissime petiolatis, inæquilateraliter ovato-lanceolatis acutis argute aristato-serratis basi inferiore rotundato, superiore subcuneato, utrinque glabris, subtus dense albido-punctatis, floribus in corymbis bisexualibus 5—6-floris breviter pedunculatis axillaribus dispositis, bracteis linearibus scariosis, floribus masculis perianthii segmentis 2 obovatis 2 oblongis, femineis perianthii segmentis 6 inæqualibus, ovario basi bracteolato angulo singulo late alato.

A native of Venezuela, first collected by Funck and Schlim.

Stem shrubby, glabrous, copiously furnished with short spreading branches. *Stipules* persistent, lanceolate, brown-scariose, two to three lines long. *Leaves* closely imbricated, nearly sessile, oblong-lanceolate, more produced and more rounded at the base on the lower side, twelve to thirty lines long, six to twelve lines broad, acute, copiously furnished with sharp aristate teeth, moderately fleshy in texture, glabrous on both sides, bright green above, densely covered with white papillæ beneath. *Flowers* white, in copious 2- to 6-flowered bisexual corymbs on axillary *peduncles* under an inch long. *Ultimate pedicels* filiform, two to three lines long, with two small lanceolate scariose *bracts*. *Female perianth* with six unequal divisions, the *ovary* with only one angle broadly winged, bracteolate at the base. *Male flower* with four lobes, two oblong, two obovate; the free *stamens* in a dense rounded head.

TAB. 245. — 1, a male flower; 2, a single stamen; 3, a female flower; 4, the same divested of its perianth; 5, horizontal section of the ovary; all magnified.—*J. G. B.*

Begonia Putzeysiana is a very free-growing plant, if kept in a warm greenhouse, and potted in a mixture of sandy loam and a little peat. It flowers freely, should have plenty of pot-room, and is easily increased by cuttings and seeds. I have had the plant for many years under cultivation, but from what source I obtained my stock I have no clue.—*W. W. S.*



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W.H. Fitch del et. lith.

J.N. Fitch imp.

Begonia conchæfolia, Dietr.

TAB. 246.

Natural Order BEGONIACEÆ.

Genus BEGONIA, *Tourn.*Section GIREOUDIA, *A. D. C. Prodr.* xv. 334.

B. CONCHÆFOLIA (*Dietr. Allg. Gartenzeit.* 1851, p. 258). Subacaulis, rhizomate obliquo, petiolis rufescentibus ferrugineo-tomentosis, foliis peltatis inæquilateraliter late ovatis acutis inconspicue dentatis carnosius supra glabris nitide viridibus infra albidis sparse ferrugineo-tomentosis, nervis 7—8 ex apice petioli radiantibus, floribus in corymbis 2-sexualibus densifloris dispositis, ramis ferrugineo-tomentosis, scapo petiolis longioribus, floribus masculis segmentis 2 obovatis, fœmineis segmentis 2 omnino similibus, ovario bracteolis 2 magnis obovatis suffultis angulo singulo late alato. — *A. D. C. Prodr.* xv. 337. *Gireoudia conchæfolia*, *Klotzch, Beg.* p. 97. *G. Warcewicziana*, *Hort. Berol. B. scutellata*, *Lieb. Mex. Beg.* p. 9.

A native of Mexico and Central America.

Scarcely caulescent, suberect, about half a foot high. *Petioles* three to six inches long, reddish, finely clothed with ferruginous tomentum. *Leaves* peltate, broad-ovate in general outline, acute, with the petiole inserted three-quarters of the way down and nearer one side than the other; teeth faint and distant; texture very fleshy; upper surface bright green, quite glabrous, lower shining, whitish, covered with very minute white papillæ and a little ferruginous tomentum on the nerves. *Scape* three to six inches long, erect, slender, finely tomentose. *Flowers* in dense dichotomous terminal bisexual corymbs, with densely ferrugineo-pubescent branches. *Ultimate pedicels* straight, two to three lines long. *Segments* of the female flowers two, pinkish, obovate, two and a half to three lines long; the *style* three-cleft to the base; the *ovary* with one angle mainly winged, nearly hidden by a pair of large oblong persistent *bracteoles*. *Male flowers* with two precisely similar segments, the free *stamens* in a laterally flattened cluster.

TAB. 246.—1, a male flower; 2, a single stamen; 3, a female flower; 4 and 5, as in the last.—*J. G. B.*

One of the most dwarf and compact *Begonias* I have under cultivation, requiring very careful treatment during the winter, when it is very apt to damp off at the roots. It should be planted in turfy loam and sandy peat, and allowed but little pot-room. A warm greenhouse suits it well, and it can be easily increased by seeds or divisions of the base of the plant. I am indebted to the Royal Botanic Gardens, Kew, for this plant.—
W. W. S.

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W.H. Fitch, del. et lith.

J.N. Fitch, imp.

Begonia pruinata, A.D.C.

TAB. 247.

Natural Order BEGONIACEÆ.

Genus BEGONIA, *Tourn.*Section GIREOUDIA, *A. D. C.*

B. PRUINATA (*A. D. C. Prodr.* xv. p. 338). Glabra vel subglabra caule crasso elongato, petiolis crassis foliis brevioribus, foliis magnis peltatis inæquilateraliter ovatis acutis subangulatis denticulatis carnosus supra pallide viridibus, infra dense glauco-pruinatis, nervis 7—8 ex apice petioli radiantibus, floribus albis in corymbis bisexualibus dispositis, ramis glabris, pedicellis elongatis nutantibus, bracteis orbiculari-obovatis deciduis, floribus masculis segmentis 2 obovato-rotundatis, fœmineis segmentis 2 omnino similibus, ovario albo angulis omnibus late alatis.—*Gireoudia pruinata*, *Klotzsch, Beg.* p. 87; *Schlecht. Linnæa*, 27, p. 550.

A native of Central America, discovered by Warcewicz.

Stem a foot long, an inch or more thick, like the rest of the plant nearly glabrous. *Petioles* five to six inches long, three to four lines thick. *Leaves* peltate, obliquely ovate, slightly angulato-repand, acute, six to nine inches long, four to five inches broad, the *petiole* inserted two-thirds of the way down and nearer one side than the other, irregularly denticulate, very thick in texture, pale bright green above, clothed with dense white bloom beneath. *Flowers* pure white, in dense dichotomous terminal corymbs half a foot across; the *branches* glabrous; the *ultimate pedicels* drooping, six to twelve lines long. *Female flower* with two roundish segments, six to eight lines deep; the *style* three-cleft nearly to the base; the *ovary* pure white, six to seven lines deep, with all the angles equally and broadly winged. *Male flower* with two precisely similar segments; the free *stamens* in a laterally flattened cluster.

TAB. 247. — 1, a stamen; 2, pistil complete; 3, horizontal section of ovary: all magnified.—*J. G. B.*

This fine *Begonia* requires similar treatment to *B. conchæfolia*, previously figured, except that it delights in plenty of pot-room to bring its large glaucous foliage to perfection. I have again to thank the Royal Botanic Garden, Kew, for this addition to my extensive collection of this beautiful genus of plants.—*W. W. S.*



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Diposis Bulbocastanum, D. C.

TAB. 248.

Natural Order UMBELLIFERÆ.

Tribe MULINEÆ.

Genus *Diposis* (*D. C. Prodr.* iv. 81). Umbellæ compositæ, floribus centralibus sessilibus hermaphroditis, lateralibus pedicellatis masculis. Calycis denti deltoidei. Petala ovata, unguiculata, integra. Discus late expansus. Fructus a dorso compressus, ad commissuram angustissimam constrictus, 2-scutatus; carpella plana disciformia; juga primaria filiformia, dorsalia in medio dorsi, intermedia marginalia, lateralia occulta; vittæ intra juga plus minus conspicuæ. Carpophorum apice bifidum. Semen a dorso compressum.—*Benth. et Hook. fil. Gen. Plant.* i. 877.

D. BULBOCASTANUM (*D. C. Prodr.* iv. 688). Perennis, glabra, tubere globoso, foliis paucis haud confertis rotundatis palmatipartitis, foliolis 5 linearibus furcatis, umbellæ radiis 3—6, bracteis linearibus, petalis oblongis breviter unguiculatis. — *C. Gay, Fl. Chil.* iii. 96; *Atlas*, fig. 31, t. 2.

A native of Chili.

Perennial. The whole plant glabrous. *Root* a round edible tuber, with a blackish coat like our English earth-nuts. *Stem* erect, slightly branched, six to twelve inches high, flexuose, finely furrowed, laxly leafy, purplish downwards. *Lower petioles* an inch and a half to two inches long, dilated at the base so as to clasp the stem. *Leaves* round in general outline, fifteen to eighteen lines broad, palmately cut down to the apex of the petiole into five forked linear divisions. *Rays of the umbel* three to six; the *fertile flowers* solitary at the apex of the primary rays, with usually two pedicellate *abortive flowers* by the side of each. *Bracts* linear. *Calyx-teeth* deltoid, distinct. *Petals* minute, whitish, oblong, shortly unguiculate. *Fruit* a quarter of an inch deep, the *mericarps* round flat disks bound together only by a mere filiform commissure, furnished with a slender rib down the face and two others down the back. *Carpophore* forked at the summit.

TAB. 248. — 1, an imperfect flower; 2, a stamen; 3, a perfect flower; 4, a petal; 5, a fertile flower divested of its petals, with two imperfect ones by its side; 6, fruit; 7, the same cut horizontally: all magnified.—*J. G. B.*

A very curious plant of the Order *Umbelliferae*, growing from a small rounded tuber, much in the way of our native pig-nut (*Bunium flexuosum*, With.) It thrives in a mixture of good turfy loam and leaf-mould, with a liberal supply of water while growing. It only requires the protection of a cool frame or pit during the winter, and is easily increased by the tubers. I received this plant from Mr. E. C. Reed, who obtained his specimens near St. Iago de Chili.—*W. W. S.*

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J.N. Fitch, imp.

Asperula orientalis, Boiss. et Hohen.

TAB. 249.

Natural Order RUBIACEÆ.

Sub-order STELLATÆ.

Genus ASPERULA, L.

Sect. SHERARDIANÆ (*D.C. Prodr.* iv. p. 581). Annuæ, corollis tubuloso-infundibuliformibus.

- A. ORIENTALIS (*Boiss. et Hohen. in Kotschy Pl. Kurd. exsic. cum descrip.* June, 1843). Annuæ, caulibus glabris erectis dichotomiter ramosis, foliis linearibus 7—10 per verticillum, floribus dense capitatis subsessilibus, bracteis linearibus dense ciliatis corollis azureis subtriplo brevioribus, calycis limbo abortivo, corollæ tubo elongato supra medium anguste infundibuliformi, segmentis ovatis patulis tubo 5—6-plo brevioribus. — *Boiss. Diag.* ser. 1, iii. 30. *A. azurea*, *Jaub. et Spach, Ill. Pl. Or.* t. 82 (Nov. 1843); *Walp. Rep.* vi. 24.

A native of Asia Minor and Kurdistan, on dry limestone hills.

Annual. *Stem* suberect, copiously dichotomously branched, a foot high when luxuriant, tetragonous, glabrous, slightly rough at the angles. *Leaves* sessile, linear, seven to ten in a whorl, six to nine lines long, the edge slightly revolute, dull green above, paler beneath, the margins scabrous. *Flowers* twelve to thirty, subsessile in dense heads, subtended by a whorl of *bracts* two to three lines long, which are densely ciliated with long white silky hairs, and often more or less tinged with the colour of the flowers. *Calyx-limb* quite obsolete. *Corolla* bright pale blue, half an inch long, with a slender tube narrowly funnel-shaped above the middle, and four ovate spreading lobes. *Stamens* sessile at the throat of the tube. *Achenes* round, hard, glabrous, a line thick.

Scarcely more than a variety of *A. arvensis*. It will be seen from the synonyms that it was named by two authors during the same year, and that the name we have used has a slight priority.

TAB. 249.—1, a leaf; 2, flower with bracts; 3, flower split open; 4, pistil: all magnified.—*J. G. B.*

This pretty little annual was supplied to me by Mr. Stark, of Edinburgh, and grows freely in pots or in the open ground. The seeds should be sown in early spring to produce strong plants, which will continue in flower for a considerable time.—*W. W. S.*



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Senecio Farrisii, Baker.

TAB. 250.

Natural Order COMPOSITÆ.

Sub-order SENECTIONIDEÆ.

Genus SENECIO, L.

Section DISCOIDEI.

S. FARRISII (*Baker*). Frutex ramosissimus ramis flexuosis virgatis albido-canescens, foliis confertis anguste linearibus uninerviis integris margine revolutis herbaceis supra subglabris infra albido-canescens, capitulis paniculatis, involucri tubuloso-campanulatis viridibus paulo canescens squamis 10—12 ligulatis æqualibus basi paucis linearibus minimis bracteatis, floribus circiter 20 omnibus discoideis homogamis involucri longioribus, achenio pubescente, pappo flore equante.

A native of Peru, sent by Mr. Farris.

A copiously-branched bush two to three feet high, with slender flexuose terete branches clothed upwards with a thin coating of white cottony pubescence. *Leaves* crowded, ascending, narrow-linear, two to two and a half inches long, not more than a line broad, one-nerved, the edge entire, revolute; texture herbaceous; upper surface green, subglabrous; lower clothed with thin white cottony pubescence like the stem. *Flower-heads* in sparse regular thyrsoïd panicles at the end of the branches. *Pedicels* one to six lines long, with small linear bracts at the base. *Involucre* tubuloso-campanulate, four lines deep, sparsely downy, consisting of ten to twelve equal ligulate scales, pressed closely edge to edge, bracteated at the base with a few minute linear ones. *Flowers* all tubular and perfect, about twenty to a head, one-fourth longer than the involucri scales. *Achenium* pubescent. *Pappus* dense, white, equalling the corolla.

Closely allied to *S. Humboldtianus*, D.C. Prodr. vi. 421, with which it coincides in its general habit, and homogamous flowers, but a more slender plant, with leaves much less firm in texture, and, like the branches, less densely coated with cottony pubescence; the involucre much narrower, containing not more than half as many flowers.

TAB. 250. — 1, a leaf viewed from above; 2, leaf viewed from below; 3, a head of flowers; 4, a single flower; 5, a ray of the pappus: all magnified.—*J. G. B.*

A half-hardy species of *Senecio*, of little beauty, easily increased by cuttings or seeds. A cool frame during the winter and the open borders during the summer suit it well. I received seeds of this plant from Mr. Farris, who obtained them in Peru. —
W. W. S.

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W.H. Fitch, del et lith.

J.N. Fitch imp.

Senecio multibracteatus, Harvey.

TAB. 251.

Natural Order COMPOSITÆ.

Sub-order SENECONIDEÆ.

Genus SENECIO, L.

Section RADIATI.

S. MULTIBRACTEATUS (Harv. *Fl. Cap.* iii. p. 361). Biennis vel perennis, erecta, robusta, subglabra, foliis inferioribus profunde pinnatifidis, lobis 2—3-jugis erecto-patentibus linearibus acutis margine revolutis, supremis simplicibus subintegris, capitulis 6—10 heterogamis radiantibus in corymbum laxum dispositis, ramis arcuatis bracteis multis minimis linearibus instructis, involucri late campanulato squamis firmis linearibus glabris acutis, interioribus 20—30 æqualibus, exterioribus multo brevioribus nigro apiculatis, ligulis 10—12 saturate rubro-purpureis, achænio pubescente, pappo albo fragili flore tubuloso æquante.

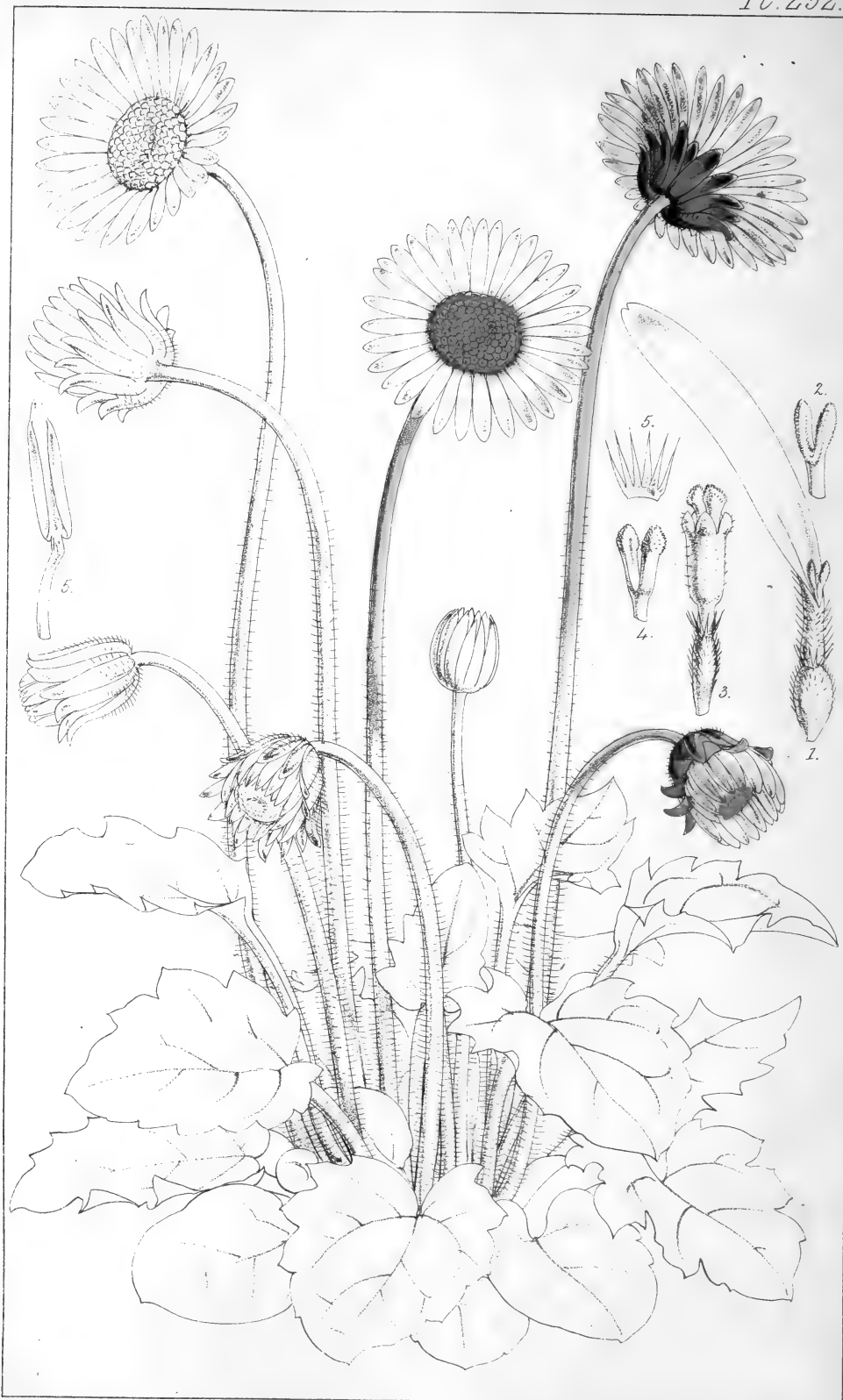
A native of Cape Colony, gathered by Mr. MacOwan and others.

Biennial or perhaps perennial. The whole plant nearly glabrous, more or less viscid upwards. *Stem* strong, erect, a foot and a half to two feet high, branched in the lower part, moderately densely leafy throughout. *Lower leaves* auricled at the base, two to three inches long, pinnatifid to a narrow wing to the midrib, with on each side two to three erecto-patent linear acute lobes with revolute edges, texture firm-herbaceous, both surfaces green. *Upper leaves* linear, simple or slightly toothed. *Flowers* six to ten in a lax corymb, with arcuate branches furnished with numerous minute linear bracts. *Involucre* campanulate, glabrous, composed of an inner row of twenty to thirty firm equal linear scales, and numerous smaller black-tipped similar ones at their base. *Expanded flower* more than an inch across. *Ray-flowers* ten to twelve, female, the ligule bright mauve-purple, like that of *S. elegans*. *Tubular florets of the disk* equalling the involucre, with a pubescent ovary and pure white fragile pappus.

TAB. 251. — 1, flower of the ray; 2, flower of the disk; 3, ray of the pappus: all magnified.—J. G. B.

My friend Mr. H. Moberly supplied me with cuttings of this plant, which rooted freely. It is a robust and rather rank-growing species if placed in the open ground, but, well grown in pots, it is more compact. It likes rich loam and plenty of water, and the protection of a cool greenhouse during the winter. A native of South Africa.—*W. W. S.*

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W. H. Fitch, del. et lith.

J. N. Fitch, imp.

Bellium rotundifolium, D. C.

TAB. 252.

Natural Order COMPOSITÆ.

Sub-order ASTEROIDEÆ.

Genus BELLIIUM, Linn.

- B. ROTUNDIFOLIUM (*D.C. Prodr.* v. 303). Perennis, acaulis, semipedalis vel pedalis, foliis rosulatis ovatis repando-dentatis obtusis vel subacutis basi subcordatis vel late cuneatis utrinque minute griseo-setosis in petiolum longum anguste desinentibus, scapo foliis 3—4-plo longioribus, capitulo magno solitario, involucrio turbinato squamis circiter 20 æqualibus ligulatis obtusis, ligulis circiter 100 squamis subduplo excedentibus, achænio compresso piloso setarum annulo coronato.—*Doronicum rotundifolium*, Desf. *Atlant.* ii. p. 279, t. 235, fig. 1. *B. giganteum*, Cass. *Dict.* 37, p. 456. *Bellis rotundifolia*, Boiss. et Reut. *Pug.* p. 29.

A native of Algeria and Morocco, recently introduced into English collections by Mr. Geo. Maw.

Perennial, acaulescent, half a foot to a foot high, with just the general habit of our common English daisy. *Leaves* about half a dozen in a radical rosette, ovate, an inch and a half to three inches long, twelve to eighteen lines broad, blunt or subacute, repando-dentate, especially in the lower half, the base varying from broadly cuneate to narrowly cordate, the haft narrowly decurrent along the petiole, texture thick-herbaceous, both sides green, in exposure tinged with purple, rough with minute adpressed gray setæ. *Petiole* one to three inches long. *Heads* always solitary, measuring fifteen to sixteen lines across when the ligules are expanded. *Involucre* turbinate, composed of about twenty equal ligulate blunt scales four lines long; more or less pubescent on the back in the lower half. *Tubular florets* hermaphrodite, shorter than the involucre. *Ligules* about a hundred, half an inch long, white tinged with red. *Achæmium* minute, compressed, densely pubescent, crowned with a ring of hairs just like those that cover the faces.

TAB. 252.—1, flower of the ray; 2, its stigmas; 3, flower of the disk; 4, its stigmas; 5, a stamen; 6, a portion of pappus: all magnified.—*J. G. B.*

A very fine daisy-like plant, flowering very freely and well worth cultivation. For an opportunity of figuring this plant I am indebted to the Royal Botanic Gardens, Kew.—*W. W. S.*



Othonna crassifolia, Harvey.

TAB. 253.

Natural Order COMPOSITÆ.

Tribe CYNARÆÆ.

Sub-tribe CALENDULÆÆ.

Genus OTHONNA, Cass.

O. CRASSIFOLIA (Harvey, *Fl. Cap.* iii. p. 336). Herbacea, glaberrima, ramis cæspitosis pendulis gracilibus dichotomiter furcatis, foliis carnosius cylindricis acutis 1—2-uncialibus basi angustatis pallide viridibus, ad apicem ramorum sterilius confertis, pedunculis 2—6-cephalis, pedicellis elongatis gracilibus ascendentibus, involucri squamis 8 oblongo-ligulatis acutis æqualibus valvatis basi connatis, ligulis circiter 12 flavis, acheniis glabris pappo brevioribus. — *O. filicaulis*, Ecklon *Fl. Cap.* p. 295, non Jacq.

A native of Cape Colony, sent lately to England in a living state by Mr. MacOwan.

Stems densely cæspitose, glabrous like the rest of the plant, pendulous, about a foot long, dichotomously branched. *Leaves* fleshy, crowded at the point of the barren shoots, alternate on the branches, subcylindrical, an inch to two inches long, acute, narrowed in the lower third, pale green more or less tinged with purple. *Peduncles* slender, terminal, two to six inches long, bearing two to six heads on slender *pedicels* an inch to three inches long. *Involucre* campanulate, formed of about eight fleshy valvate ligulate-oblong acute scales united in a cup at the base. *Ray-flowers* about a dozen, female; the *ligule* a rather dull yellow. *Tubular flowers* dense, hermaphrodite, about equalling the involucre. *Achenes* glabrous, crowned by a *pappus* of long white scabrous hairs.

TAB. 253. — 1, head of flowers; 2, flower of the ray; 3, its stigmas; 4, achenium and pappus; 5, flower of the disk; 6, ray of the pappus: all magnified.—*J. G. B.*

This is a small but interesting species of *Othonna*, with a very pendent habit, thriving when planted in a mixture of sandy loam and leaf-mould, and grown in a light warm airy greenhouse. During the winter especially it should be kept near the light, and then requires but little water. I received this plant from my friend Mr. D. Hanbury, F.R.S.—*W. W. S.*

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W. H. Fitch, del. et lith.

J. N. Fitch, map.

Gomphocarpus padifolius, Baker

TAB. 254.

Natural Order ASCLEPIADACEÆ.

Tribe ASCLEPIADEÆ.

Genus GOMPHOCARPUS, *R. Br.*

G. PADIFOLIUS (*Baker*). Radice tuberoso caule simplici annuo erecto tereti glabro 2—3-pedali, foliis decussatis sessilibus late ovatis cordatis acutis horizontalibus firmo-herbaceis glabris supra viridibus subtus glaucis pulchre reticulato-venulosis, umbellis axillaribus 6—10-floris breviter pedunculatis, pedicellis glabris floribus 2—3-plo longioribus, sepalis parvis lanceolatis, petalis lanceolatis purpureo-viridibus reflexis liberis, coronæ lobis deltoideis carnosis albo-viridibus stigmatibus paulo brevioribus.

A native of Natal, discovered by Mr. Thos. Cooper.

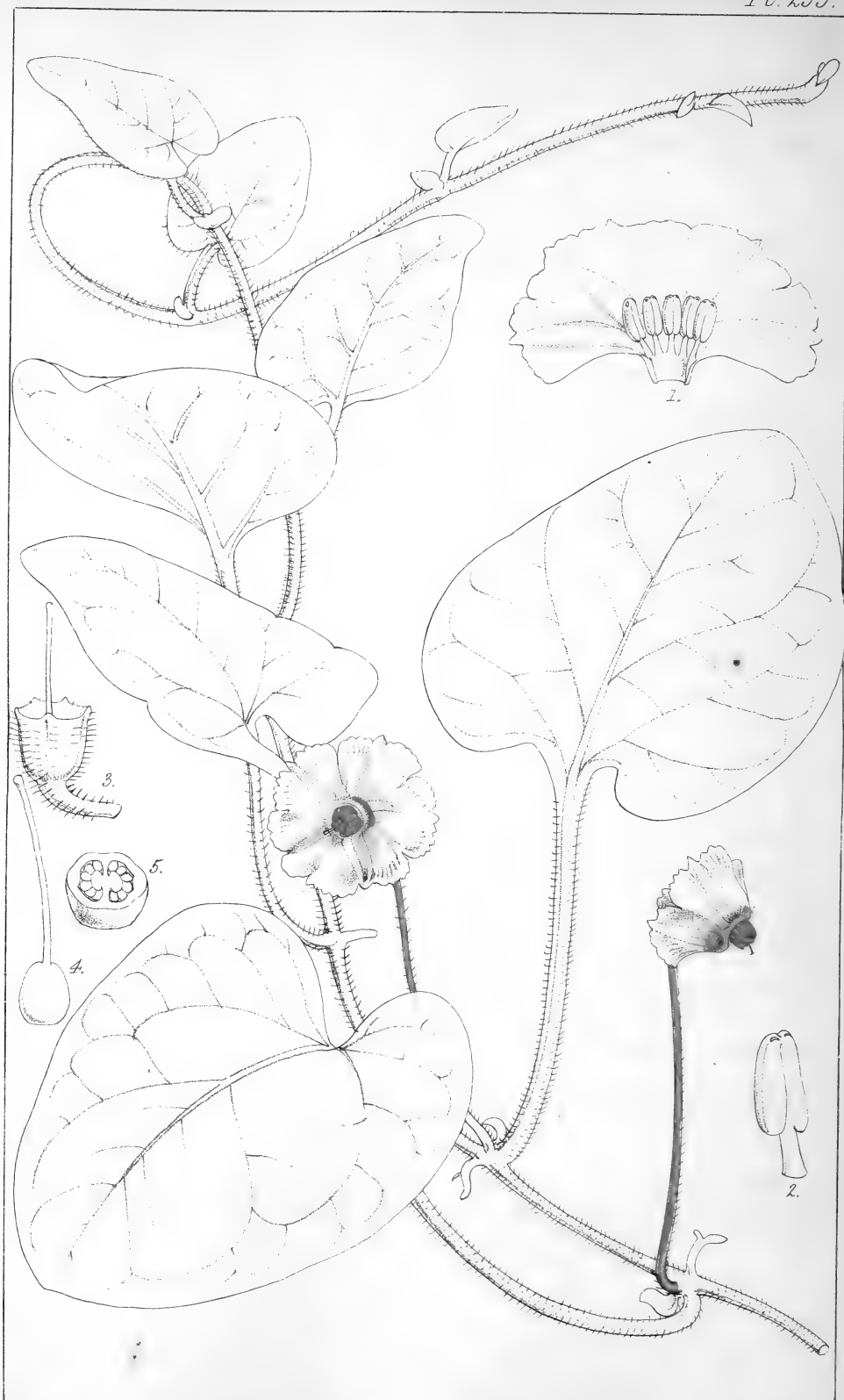
Root a large perennial tuber. *Stem* annual, milky, erect, unbranched, two to three feet high, glabrous, purplish green. *Leaves* in close opposite pairs, decussate, sessile, broadly cordate-ovate, two to three inches long, acute, quite entire, glabrous, horizontal; the upper surface pale green, more or less tinged with purple as they grow old; the under surface glaucous, with the venation beautifully distinct, deeper in colour. *Flowers* only from the axils of the leaves (not terminal), in shortly-stalked umbels of six to ten each. *Pedicels* glabrous, six to nine lines long. *Calyx* green, an eighth of an inch deep; the *sepals* lanceolate. *Corolla* three-eighths of an inch deep, the lobes purplish green, lanceolate, reflexed when the flower expands. *Divisions of the crown* greenish yellow, quite simple, fleshy, deltoid, rather shorter than the large pentagonal *stigma*.

TAB. 254.—1, complete flower; 2, three pollen-masses: all magnified. *J. G. B.*

A warm-greenhouse plant, delighting in abundance of water while growing. It should be grown in sandy loam and peat, and allowed plenty of pot-room. Mr. T. Cooper sent me this plant from South Africa in the year 1867.—*W. W. S.*



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W.H. Fitch, del et lith.

J.N. Fitch, imp.

Solanum ^{*}*asarifolium*, Kunth & Bouché.

TAB. 255.

Natural Order SOLANACEÆ.

Genus SOLANUM, L.

Section PACHYSTEMONUM, Dunal.

S. ASARIFOLIUM (Kunth & Bouché, *Ind. Sem. Hort. Berol.* 1845, p. 10).

Caule longe repente gracili ramoso stolonifero, foliis geminatis, unico longe petiolato ovato basi late cordato integro membranaceo glabro, altero sessili minuto obovato deciduo, pedunculis axillaribus petiolo brevioribus solitariis unifloris apice cernuis, calyce campanulato obsolete 5-dentato, corollis magnis albis rotatis paullulum 5-lobatis, bacco glabro globoso magno. — *Dunal in D. C. Prodr.* xiii. p. 164.

A native of Venezuela, gathered by Otto, Fendler, Ernst, &c.

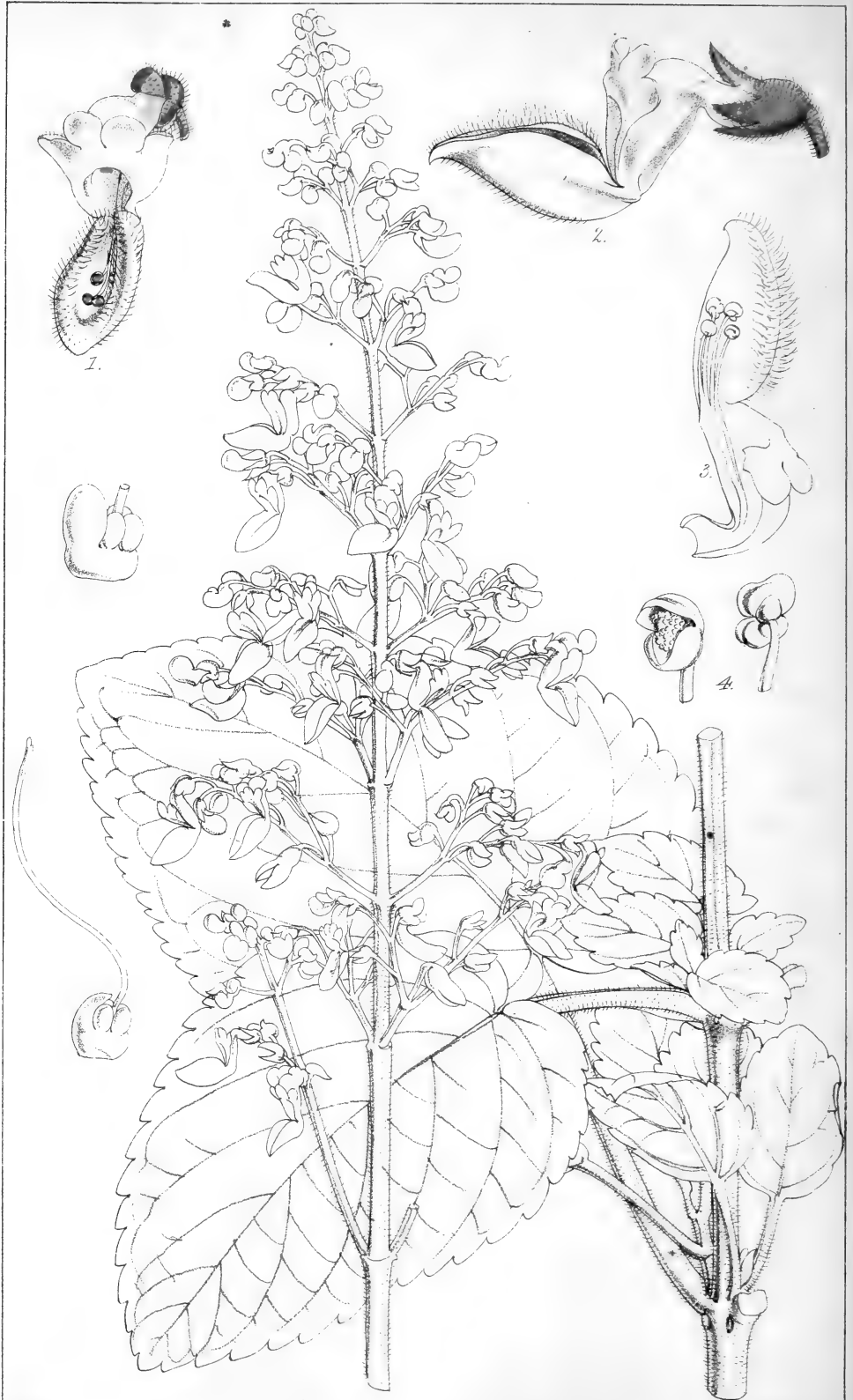
Stem slender, wiry, unarmed, trailing widely along the surface of the soil, branched, stoloniferous, at first faintly pubescent. *Internodes* an inch to six inches long, each node furnished with a pair of leaves, one of which has a slender petiole sometimes five to six inches long, the blade cordate-ovate, three to six inches long when fully developed, membranous, the basal lobes broadly rounded, both sides green and glabrous; the other leaf minute, sessile, obovate, deciduous. *Peduncles* solitary from the axils of the leaves, one-flowered, slender, erect, two to four inches long, cernuous at the apex. *Calyx* campanulate, two lines deep, slightly pubescent, with five obscure teeth. *Corolla* white, an inch across when fully expanded, faintly five-lobed. *Berry* round, glabrous, half an inch thick.

TAB. 255. — 1, corolla cut open; 2, anther; 3, calyx; 4, pistil; 5, horizontal section of ovary: all magnified. — *J. G. B.*

This species of *Solanum* was reared in the Royal Botanic Gardens, Kew; and I am indebted to this establishment for the figure which is here given. — *W. W. S.*



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W.H. Fitch del et lith.

J.N. Fitch imp.

Plectranthus coleoides, Benth.

TAB. 256.

Natural Order LABIATÆ.

Tribe OCIMOIDEÆ.

Genus PLECTRANTHUS, *L'Herit.*Section COLEOIDES, *Benth.*

P. COLEOIDES (*Benth. in D. C. Prodr.* xii. 64). Caulibus erectis dense griseo-pubescentibus, foliis petiolatis late cordato-ovatis subacutis inciso-crenatis pallide viridibus crassiusculis precipue infra griseo-puberulis, floribus in paniculis thyrsoides elongatis ramis stricte erecto-patentibus ultimis racemosis dispositis, bracteis deltoideis acuminatis floribus expansis deciduis, calycis fructiferi dente supremo ovato concavo, dentibus reliquis lanceolatis, corollis calyce quadruplo longioribus, tubo ad medium defracto, ore dilatato, labio superiore erecto bifido lobis rotundatis, inferiore magno integro cucullato. *Coleus Colvillei, Hort.*

A native of the lower levels of the Neilgherries, tropical region; gathered by Hohenacker, G. Thomson, &c.

Stems twelve to eighteen inches high, branched in the lower part, clothed upwards with dense gray pubescence. *Petioles* fleshy, erecto-patent, an inch to two inches long. *Leaves* broadly cordate-ovate, two to four inches long, an inch and a half to three inches broad, subacute, inciso-crenate, rather fleshy in texture, pale green above with inconspicuous adpressed short hairs, tinged with purple beneath with much more pubescence of the same kind. *Flowers* in a copious thyrsoid panicle ultimately a foot long, with rigidly erecto-patent branches. *Bracts* ovate-acuminate, falling when the racemes expand. *Pedicels* erecto-patent, a line long. *Calyx* pubescent, in the flowering stage a line long, in the fruiting stage two lines; the tube campanulate; the large upper tooth oblong, concave, the three lower ones lanceolate. *Corolla* pale lilac, four times the length of the calyx; the tube deflexed in the middle, above this much dilated to the throat; the short upper lip erect, with two rounded lobes, the lower one much larger, boat-shaped, including the four stamens.

TAB. 256. —1, flower viewed in front; 2, flower viewed from side; 3, corolla cut open to show the stamens; 4, two views of anther; 5, nuts: all magnified.—*J. G. B.*

This interesting species of *Plectranthus* grows very freely and is of easy culture. It does well out-of-doors during the summer, and should be placed in the greenhouse during the winter, where it produces numerous pretty purple and white blossoms. It is propagated by cuttings or seeds. It was sent to me some years since under the name of *Coleus Colvillei*.—*W. W. S.*

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W. H. Fitch, del. et lith.

J. N. Fitch, imp.

Anthurium violaceum, Schott

TAB. 257.

Natural Order AROIDEÆ.

Tribe ORONTIÆ, *R. Br.*Genus ANTHURIUM, *Schott.*

A. VIOLACEUM (*Schott, Melet. i. p. 22*). Caule elongato reptante, radículas firmas copiosas emittente, vaginis confertis scariosis instructo, foliis breviter petiolatis oblongo-lanceolatis acutis basi cuneatis subcoriaceis viridibus glabris utrinque minute nigro-punctatis pseudoneuro continuo distincto prope marginem percursis, pedunculis gracilibus 1—2 uncialibus, spathis lanceolatis viridibus demum deflexis, spadicibus parvis viridibus cylindricis conferte 20—30-floris spathis superantibus, ovarii loculis biovulatis, baccis globosis pisiformibus violaceis.—*Kunth, Enum. iii. p. 68. Pothos violacea, Swartz, Prodr. p. 32; Hook. Exot. Flora, t. 55.*

A native of Tropical America, extending from Mexico southward to Brazil.

Stems woody, wide-creeping, sending out copious firm rootlets, closely clothed with brown scariose fibrous sheaths. *Petioles* firm, naked, an inch to two inches long, subterete on the back, channelled down the face, with a swollen node two to three lines long at the apex. *Leaves* oblong-lanceolate, three to six inches long, twelve to eighteen lines broad, acute, cuneate at the base, subcoriaceous, both sides green, glabrous, copiously marked with minute black dots, furnished with a distinct rib running parallel with the edge all down at a distance from it of two to three lines. *Peduncles* axillary, slender, an inch to two inches long. *Spathe* lanceolate, fleshy, green, half an inch long, deflexed when the spadix is in perfection. *Spathe* six to eighteen lines long, two lines thick, green, cylindrical, with twenty to thirty closely-packed flowers. *Cells of the ovary* biovulate. *Berry* globose, glabrous, bright lilac, two lines thick.

There is a variety of the same species (*A. leucocarpum*, *Schott. Prodr. Aroid. p. 437*) with snow-white berries.

TAB. 257.—1, portion of leaf; 2, spathe and spadix; 3 and 4, a single flower viewed from side and top; 5, pistil and stamens: all magnified.—*J. G. B.*

A moist stove plant, quite ornamental when well furnished with its pale violet-and-white berry-like bunches of fruit, which last in perfection a considerable time. It should be potted in very porous peat and sphagnum, and is increased by cuttings or seeds. I obtained this plant from Belgium many years since, and at present I have no further clue to its history.—*W. W. S.*



W.H. Eitch, del. et. hdb.

J.N. Fitch, imp.

Milla porrifolia, Baker.

TAB. 258.

Natural Order LILIACEÆ.

Tribe MILLEÆ.

Genus MILLA, Cav.

Section HESPEROSCORDUM (Lindl.)

M. PORRIFOLIA (Baker in Linn. Proc. xi. 386.) Bulbo ovoideo, foliis 4—6 carnosio-herbaceis viridibus glabris anguste linearibus scapo excedentibus, spathæ valvis duabus lanceolatis basi connatis pedicellis subæquantibus, umbellis 4—8-floris, perianthii infundibuliformi segmentis lanceolatis albis viridi-carinatis tubo 2—3-plo excedentibus, staminibus in tubo inclusis biseriatis, ovario sessili oblongo loculis 4—6-ovulatis, stylo filiformi ovario excedente.—*Triteleia porrifolia*, Popp. Fragm. p. 10; Kunth, Enum. iv. 468; C. Gay, Fl. Chil. vi. p. 118.

A native of Chili, gathered by Poppig, Beechey, Cuming, &c.

Bulb ovoid, tunicated, eight to twelve lines thick, with white membranous coats. *Scapes* one or two from a root, erect, slender, six to nine inches high. *Leaves* four to six to a bulb, glabrous, fleshy-herbaceous, linear, a line and a half to two lines broad, channelled down the face, overtopping the flowers. *Flowers* four to eight in an umbel on *pedicels* nine to twelve lines long. *Valves of spathe* two, linear, connate downwards. *Perianth* funnel-shaped, nine to ten lines deep; the divisions lanceolate, acute, white, keeled with green, two to three times as long as the tube. *Stamens* biseriate, included within the tube; the *filaments* three or four times as long as the *anthers*. *Ovary* sessile, oblong, with four to six ovules in each cell. *Style* filiform, exceeding the ovary, tipped with a trisulcate *stigma*. *Seeds* black, a line long, irregularly obovoid-triquetrous.

TAB. 258. — 1, complete flower; 2, vertical section of flower; 3, horizontal section of ovary; all magnified.—J. G. B.

I received bulbs of this neat little plant from E. C. Reed, who procured them from the neighbourhood of St. Jago de Chili. It needs only the protection of a cool frame during the winter, and the open air in summer, potted in a mixture of turfy loam and leaf-mould.—W. W. S.





W.H. Fitch del. et lith.

J.N. Fitch, imp.

Cyanella lutea, Linn.
var. *rosea*, Baker.

TAB. 259.

Natural Order LILIACEÆ.

Tribe CONANTHERÆ.

Genus CYANELLA, Linn.

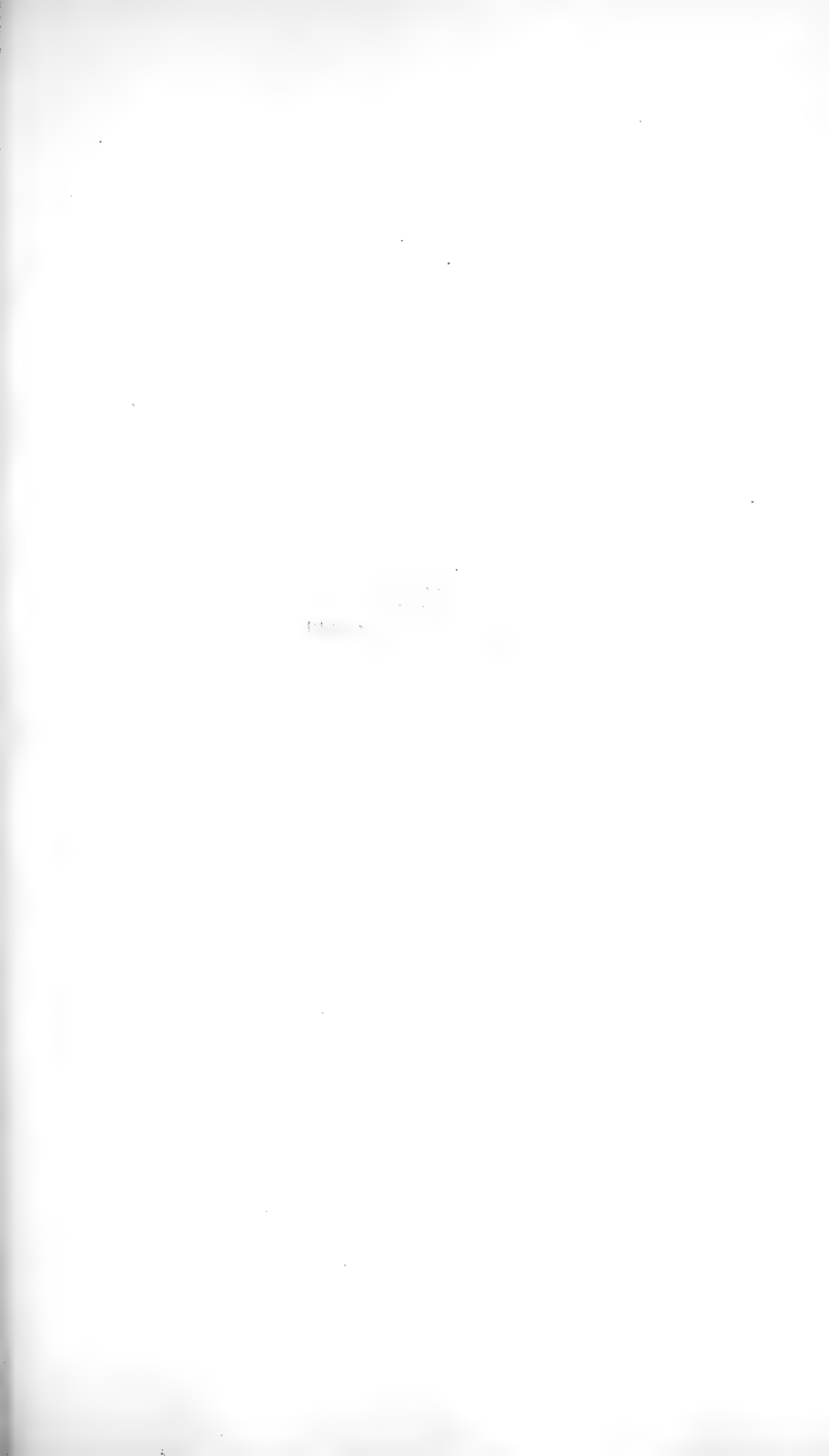
C. LUTEA (Linn. *Suppl.* p. 201), var. *ROSEA* (Baker). Glabra, semipedalis vel pedalis, foliis radicalibus 4—8 linearibus coriaceis semipedalibus undulatis, scapis simplicibus vel plus minusve ramosis, racemis laxè 6—12-floris, bracteis linearibus, pedicellis arcuatis infimis flore 2—3-plo longioribus, perianthii segmentis lanceolatis semiuncialibus roseis rubro-venosis subæquilongis, inferiori paulo latiore, antheris 5 sterilibus arcuato-ascendentibus singulo sterili deflexo duplo brevioribus.—*C. rosea*, Ecklon, MSS.

A native of Cape Colony, collected by Mr. Thos. Cooper.

Bulb a hard globose tuber, half an inch thick, with a few fibrous coats. *Leaves* four to eight, clasping tightly the base of the scape for an inch to three inches, linear, glabrous, coriaceous, persistent, four to six inches long, two to three lines broad. *Scape* six to twelve inches long, often simple, but when luxuriant paniculately branched. *Central raceme* laxly six- to twelve-flowered, two to three inches broad. *Bracts* linear-acuminate, three to six lines long. *Pedicels* arcuate-ascending, the lowest twelve to eighteen lines long. *Perianth* pale rose with deeper veins, six to seven lines deep; the divisions lanceolate, the lowest a little broader than the rest. *Stamens* six, perigynous, the five upper ones ascending, sterile, the lower one with an anther twice as long as the others. *Ovary* adhering to the base of the perianth. *Capsule* globoso-triquetrous, three to four lines long, with about four seeds in each cell.

TAB. 259.—1, complete flower; 2, one of the small anthers; 3, the single large anther; 4, pistil; 5, horizontal section of ovary: all magnified.—*J. G. B.*

A very pretty pink variety of *Cyanella lutea*, collected in South Africa by Mr. Thos. Cooper, and under whose careful management the plant flowered from which the figure was taken. A cool greenhouse treatment, like that given to an *Ixia*, seems to suit it well.—*W. W. S.*





W.H.Fitch, del et lith.

J.N.Fitch, imp.

Symea gillesioides, Baker.

TAB. 260.

Natural Order LILIACEÆ.

Tribe MILLEÆ.

Genus SYMEA (*Baker*). Perianthium viride, basi breviter campanulato-gamophyllum, segmentis 6 ovato-lanceolatis, flore expanso patentibus, interioribus distincte latioribus et brevioribus. Stamina fertilia 3, ad faucem tubi inserta, filamentis brevibus filiformibus basi dilatatis, antheris parvis oblongo-rotundatis, cum staminodiis 3 minutis linearibus membranaceis alternantibus. Ovarium sessile, in tubo inclusum, triloculare, ovulis in loculo binis; stylus brevis, rectus, clavato-filiformis; stigma punctiforme. Capsulam nondum vidi. Herba chilensis radice tuberoso folio unico lineari carnosio-herbaceo floribus umbellatis.

S. GILLESIOIDES (*Baker*). Folio lineari solitario pedunculo 3—4-plo excedente, umbellis 3—4-floris, perianthii segmentis interioribus latioribus brevioribus.

A native of Chili, discovered and sent to Mr. Saunders by Mr. E. C. Reed.

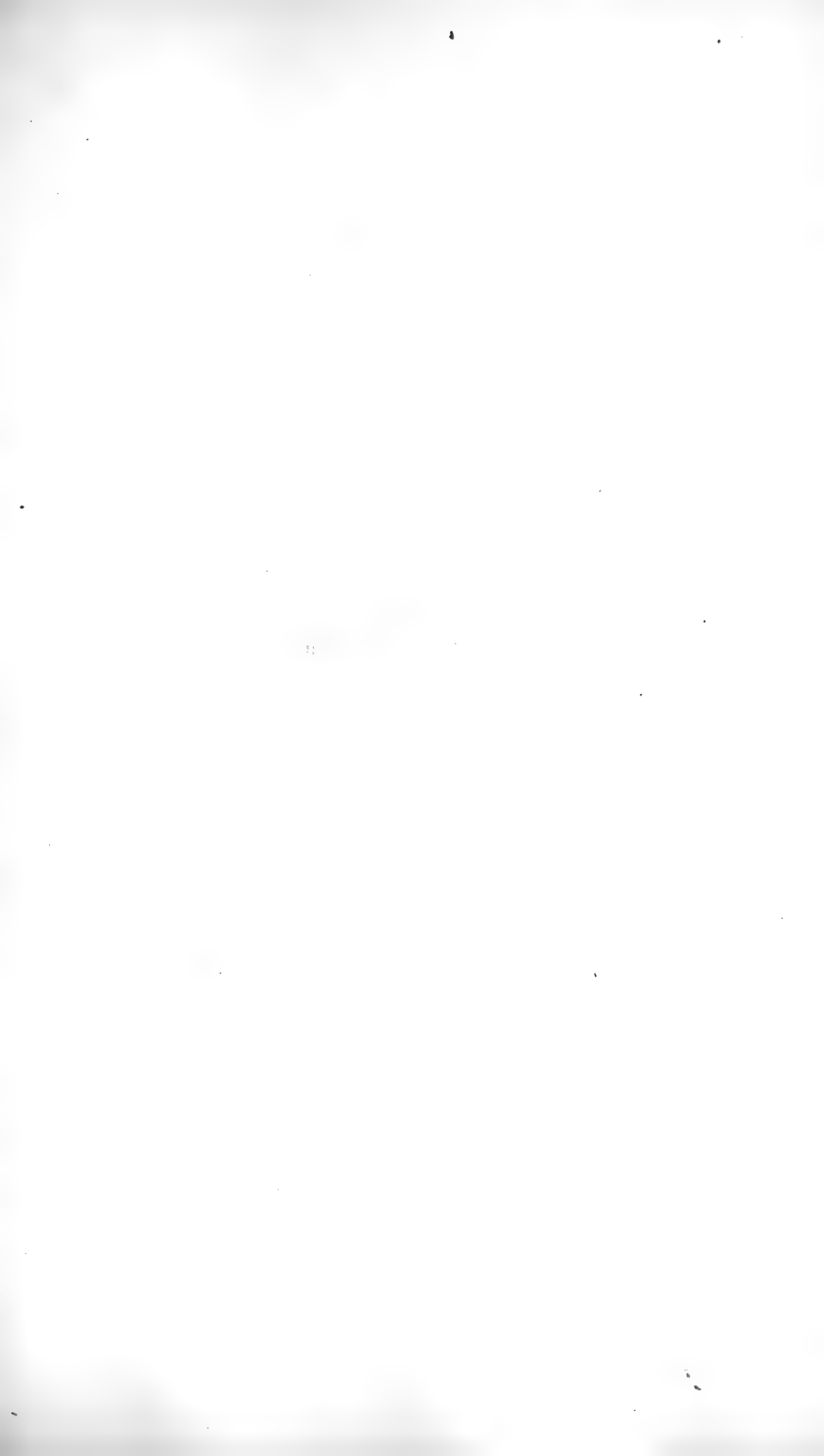
Base of the stem tuberous, with a tuft of fleshy fibres and the new corm on one side of them. *Leaf* solitary, clasping the base of the stem, linear, six to seven inches long, three to four lines broad downwards, fleshy-herbaceous, bright green, glabrous, deeply channelled down the face. *Scape* slender, terete, green, erect, two to three inches long. *Flowers* three to four in an umbel subtended by a pair of linear membranous bracts. *Developed pedicels* six to nine lines long. *Perianth* three-eighths of an inch deep, green; the tube very short, campanulate; the divisions ovate-lanceolate, not ribbed, the inner three distinctly shorter and broader than the outer ones. *Stamens* three, inserted at the throat of the tube alternately with three minute linear membranous staminodia; the short erect fleshy filament equalling the roundish-oblong anther, both together under a line long. *Ovary* immersed in the tube, the clavate style rising out of it, the stigma punctiform. *Ovules* two in each cell.

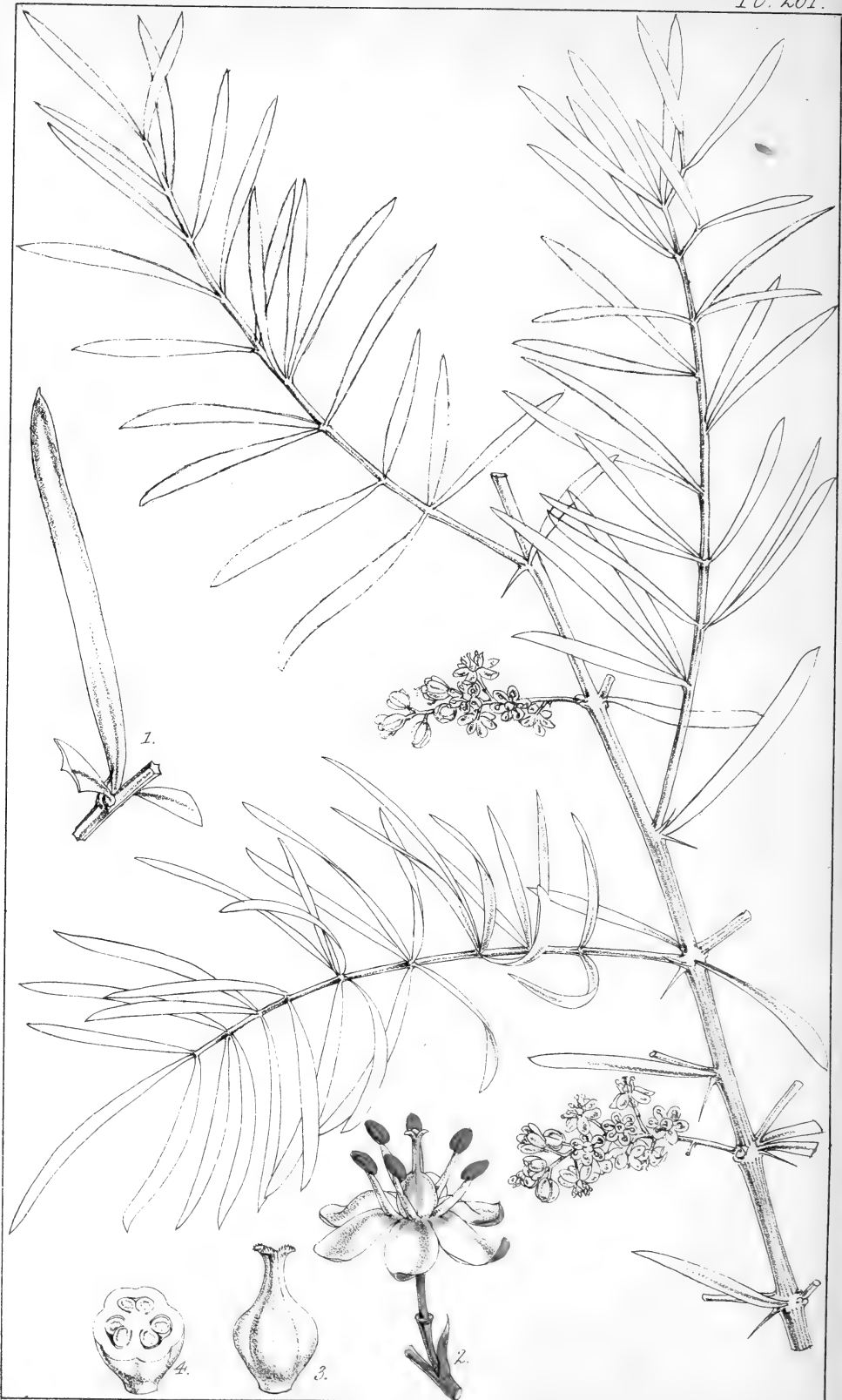
We have named this very distinct new genus—which occupies a position intermediate between *Gilliesia* on the one hand, and *Leucocoryne* and *Brodiaea* on the other—in honour of J. T. Boswell Syme, Esq., LL.D., of Balmuto House, Kirkcaldy, Fifeshire, as a tribute of acknowledgment of the pains he has taken

and the ability he has displayed in marshalling and describing the plants of Britain in the now nearly completed third edition of Sowerby's 'English Botany;' and as desiring, too, to connect his name with an Order, the European members of which he has for many years studied carefully under cultivation.

TAB. 260.—1, a closed flower; 2, an expanded flower; 3, pistil; 4, horizontal section of ovary: all magnified.—*J. G. B.*

A curious and interesting little bulbous plant, collected in the vicinity of St. Jago de Chili, by Mr. E. C. Reed, who sent me bulbs, which grew freely in a mixture of light sandy loam and leaf-mould. It will do well in a cold frame or greenhouse, grown in well-drained small pots, and fully exposed to the sun and light, and supplied freely with water. Dr. Syme well merits the compliment paid him by Mr. Baker for the talented exertions he has for a long time made in the cause of British Botany.—*W. W. S.*





W.H. Fitch, del. et lith.

J.N. Fitch, imp.

Asparagus aethiopicus, Linn.
var. *ternifolius*, Baker

TAB. 261.

Natural Order LILIACEÆ.

Tribe ASPARAGÆÆ.

Genus ASPARAGUS, L.

A. ÆTHIOPICUS (*Linn. Mant. p. 63*), var. TERNIFOLIUS (*Baker*). Fruticosa, volubilis, glabra, ramosissima, nodis spinis deflexis parvis solitariis instructis, cladodiis uncialibus complanatis anguste linearibus acutis rigide coriaceis sæpissime ternis, racemis lateralibus 12—20-floris breviter pedunculatis, pedicellis infra medium articulatis, perianthii segmentis oblongo-lanceolatis flore expanso reflexis, filamentis filiformibus perianthio subduplo brevioribus, ovarii ovoidei loculis biovulatis.

A native of Natal, sent to England by Mr. Thos. Cooper.

A copiously-branched twining shrub, attaining a height of several feet, with slender woody angular furrowed *branches*, with a firm deflexed pungent straight *spine* one-eighth to one-fourth of an inch long from each node. *Cladodia* in threes, flattened, narrow-linear, an inch long, under a line broad, acute, narrowed in lower third, sessile, articulated at the base, rigidly coriaceous, bright green, glabrous. *Flowers* in shortly-stalked racemes of twenty to thirty flowers each, lateral from the nodes of the branches. *Pedicels* one-eighth to one-fourth of an inch long, jointed below the middle. *Perianth* white, reflexed when expanded; the *segments* oblong-lanceolate, a line long. *Stamens* half as long as the segments, the *anthers* bright red. *Ovary* obovoid, the *cells* biovulate.

This has the cladodia in threes, but in nothing else can I distinguish it from the Linnean plant, which is said to have about seven to each node.

TAB. 261. — 1, a leaf; 2, a single flower; 3, pistil; 4, horizontal section of ovary: all magnified.—J. G. B.

Mr. Thos. Cooper obtained for me in South Africa several species of *Asparagus* and *Myrsiphyllum*, all of which are very interesting, and several well worthy of being cultivated, on account of their elegant climbing habit. The variety of *Asparagus æthiopicus* now figured is one which will not fail to be admired when well grown. It requires but a cool greenhouse, and should be grown in a soil composed of light sandy loam and leaf-mould, in large well-drained pots, and should be supplied, while growing, with abundance of water. It should be carefully re-potted before making its growth,—W. W. S.



UNIVERSITY OF CHICAGO



W.H. Fitch, del. et lith.

J.N. Fitch, imp.

Ornithogalum caudatum, Ait.

TAB. 262.

Natural Order LILIACEÆ.

Tribe SCILLEÆ.

Genus ORNITHOGALUM, Linn.

Section UROPHYLLUM (Salisb.)

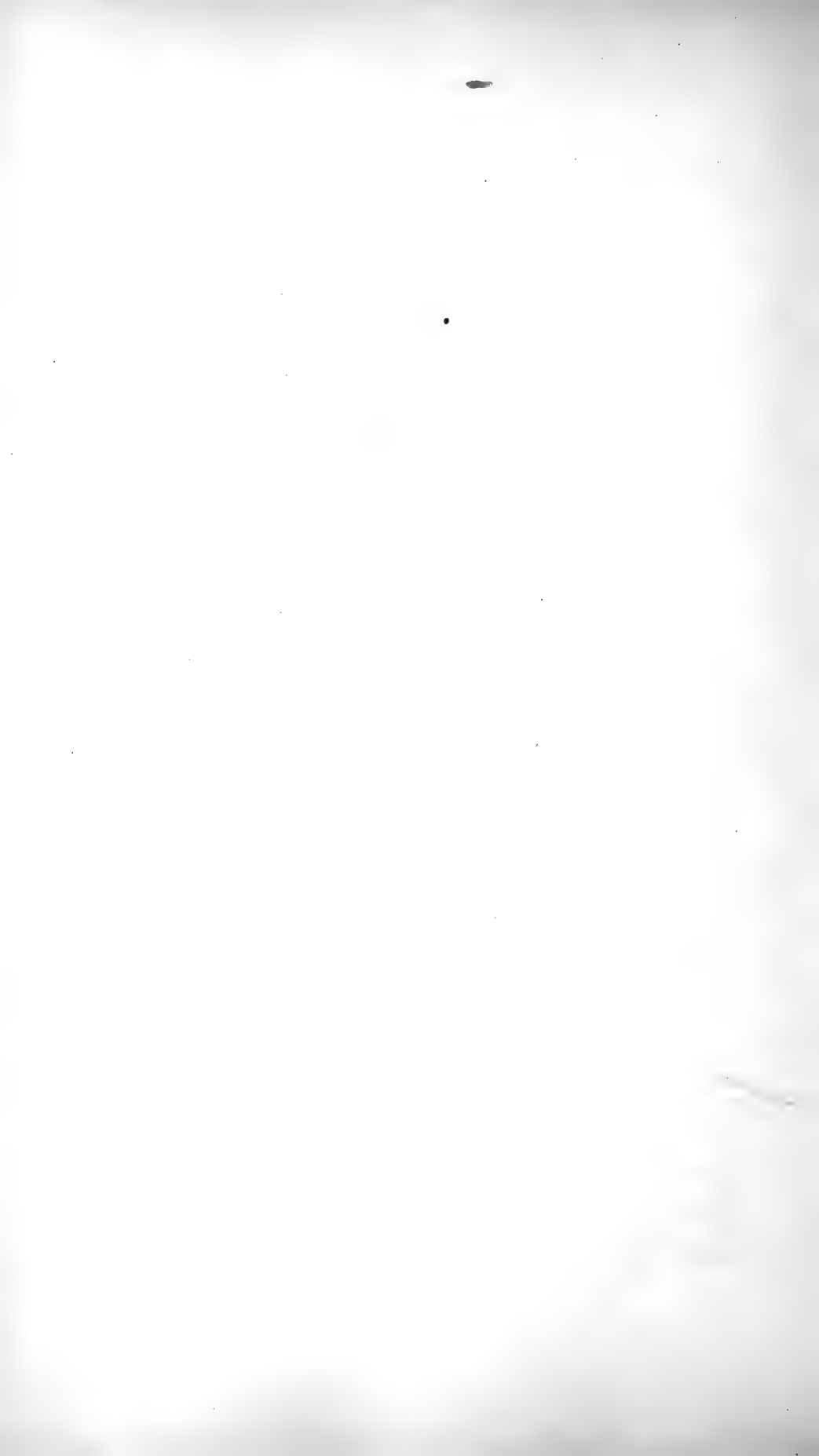
O. CAUDATUM (*Ait. Hort. Kew*, i. 442). Bulbis magnis ovoideis cæspitosis semiemersis, foliis 5—6 sesqui-pedalibus flaccidis loratis glabris dimidio superiore sensim angustatis, racemo 50—80-floro anguste thyrsoidæo demum pedali, pedicellis patentibus floribus æquilongis, bracteis linearibus sæpe uncialibus, perianthio semi-unciali segmentis lanceolatis albidis viridi-vittatis, filamentis omnibus deorsum dilatatis perianthio duplo brevioribus, ovario globoso seminibus in loculo 8—10. — *Bot. Mag.* t. 805; *Kunth, Enum.* iv. p. 357.

A native of Cape Colony.

Bulbs cæspitose, half emergent, ovoid, tunicated, three to four inches thick. *Leaves* five or six to a root, contemporary with the flowers, lorate, fifteen to eighteen inches long, fifteen to eighteen lines broad downwards, glabrous, flaccid, narrowed gradually to an acute point. *Scape* a foot and a half to three feet high, firm, erect, terete. *Raceme* fifty- to eighty-flowered, finally a foot or more long, two to two and a half inches broad. *Lower pedicels* patent, six to eight lines long. *Bracts* linear, nine to twelve lines long. *Perianth* half an inch deep, the divisions dull white with a broad green keel. *Filaments* half as long as the perianth, all lanceolate or subquadrate in the lower half. *Capsule* globose, with eight to ten seeds in a cell. *Style* nearly as long as the ovary.

TAB. 262.—1, stamen with dilated filament; 2, pistil; 3, horizontal section of ovary: all magnified.—*J. G. B.*

An old inhabitant of this country, well figured in the 'Botanic Magazine' sixty-five years since. As this figure, however, gives no idea of the habit and character of the plant, and offers no details of the parts, I have thought it desirable to refigure the plant and supply the desired information. The plant loves light, a moderately cool treatment, and to be grown in a light rich loam. When so treated it produces a series of long, rich shining green leaves from a large, smooth, glossy bulb, which should be always kept above ground. It is often beautifully grown as a window plant by cottagers.—*W. W. S.*



Book 11
of the
UNIVERSITY OF CHICAGO



W.H. Fitch, del. et. lith.

J.N. Fitch, imp.

Haworthia vittata, Baker

TAB. 263.

Natural Order LILIACEÆ.

Tribe ALOINÆÆ.

Genus HAWORTHIA, Duval.

H. VITTATA (Baker). Acaulis, foliis 20—30 crassissimis in rosulam dense confertis, exterioribus patentibus oblongo-lanceolatis sesquuncialibus pilifero-aristatis, e medio sursum ad basin aristæ sensim angustatis, pallide viridibus facie paullulum convexis dorso rotundatis, utrinque lævibus per tertiam superiorem pellucido-vittatis, marginibus et aristâ setis pellucidis ciliatis, pedunculo subpedali, racemo 12—20-floro, pedicellis perbrevis, perianthio albo viridi vittato limbo distincte bilabiato tubo duplo brevior.

A native of Cape Colony, gathered by Mr. Cooper.

Leaves twenty to thirty in a dense sessile rosette three inches broad, an inch and a half high, oblong-lanceolate, narrowed a little between the middle and the base, narrowed gradually upwards into a long pellucid awn, a quarter of an inch thick in the middle, the upper third marked on both sides with limpid lines, the edge and awn ciliated with minute limpid setæ, colour pale green without spots, the face slightly convex, the back broadly rounded. *Inner leaves* erect, *outer* patent. *Peduncle* nearly a foot long, exclusive of the raceme. *Flowers* twelve to twenty, the upper subsessile, the lower shortly pedicellate. *Bracts* lanceolate, three to four lines long. *Perianth* seven to eight lines long, white striped with green; the distinctly bilabiate limb half as long as the tube.

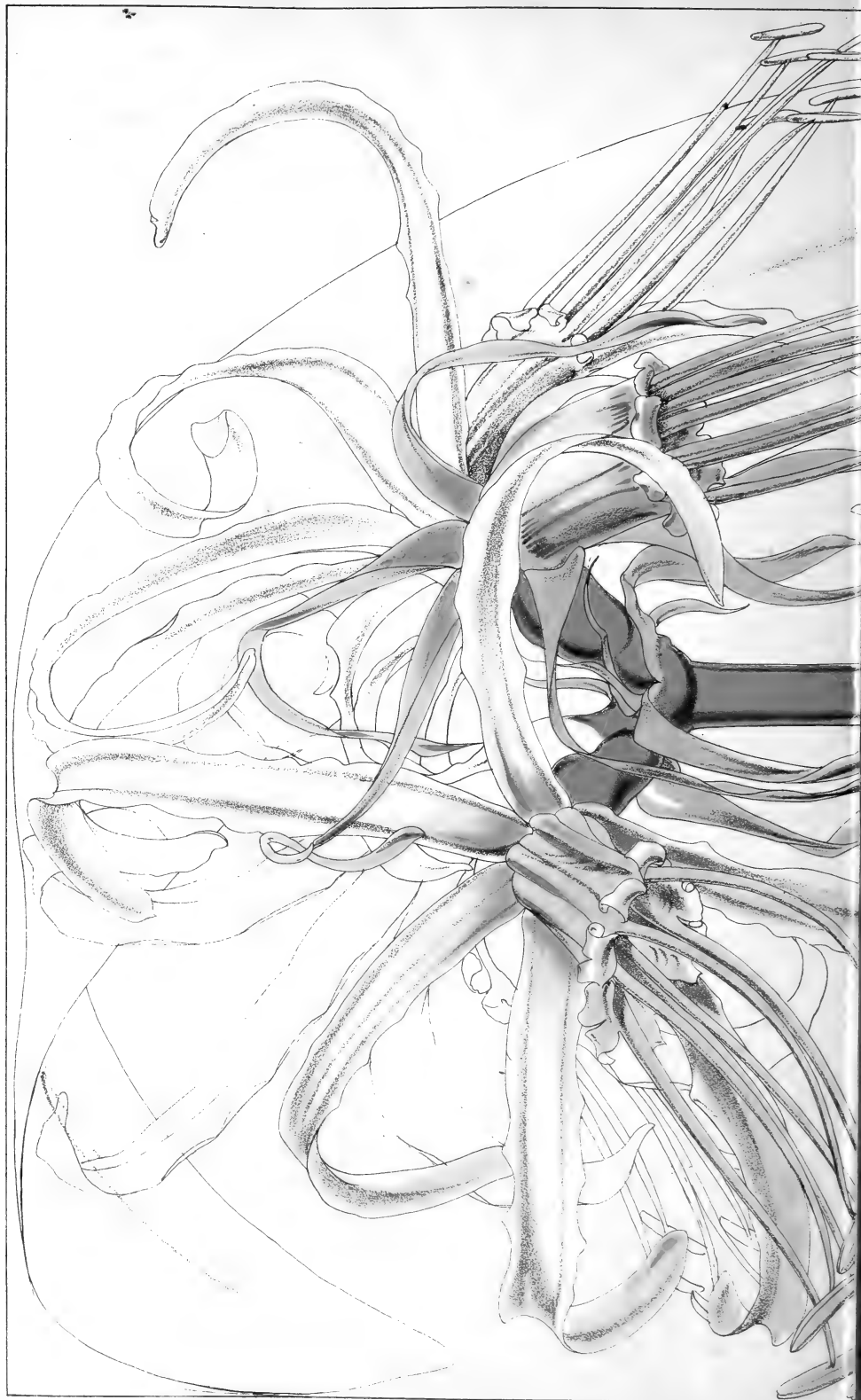
Closely allied to *H. pilifera* (Tab. 234), but the leaves are different in size and shape, and not ciliated on the keel, and the peduncle is much taller.

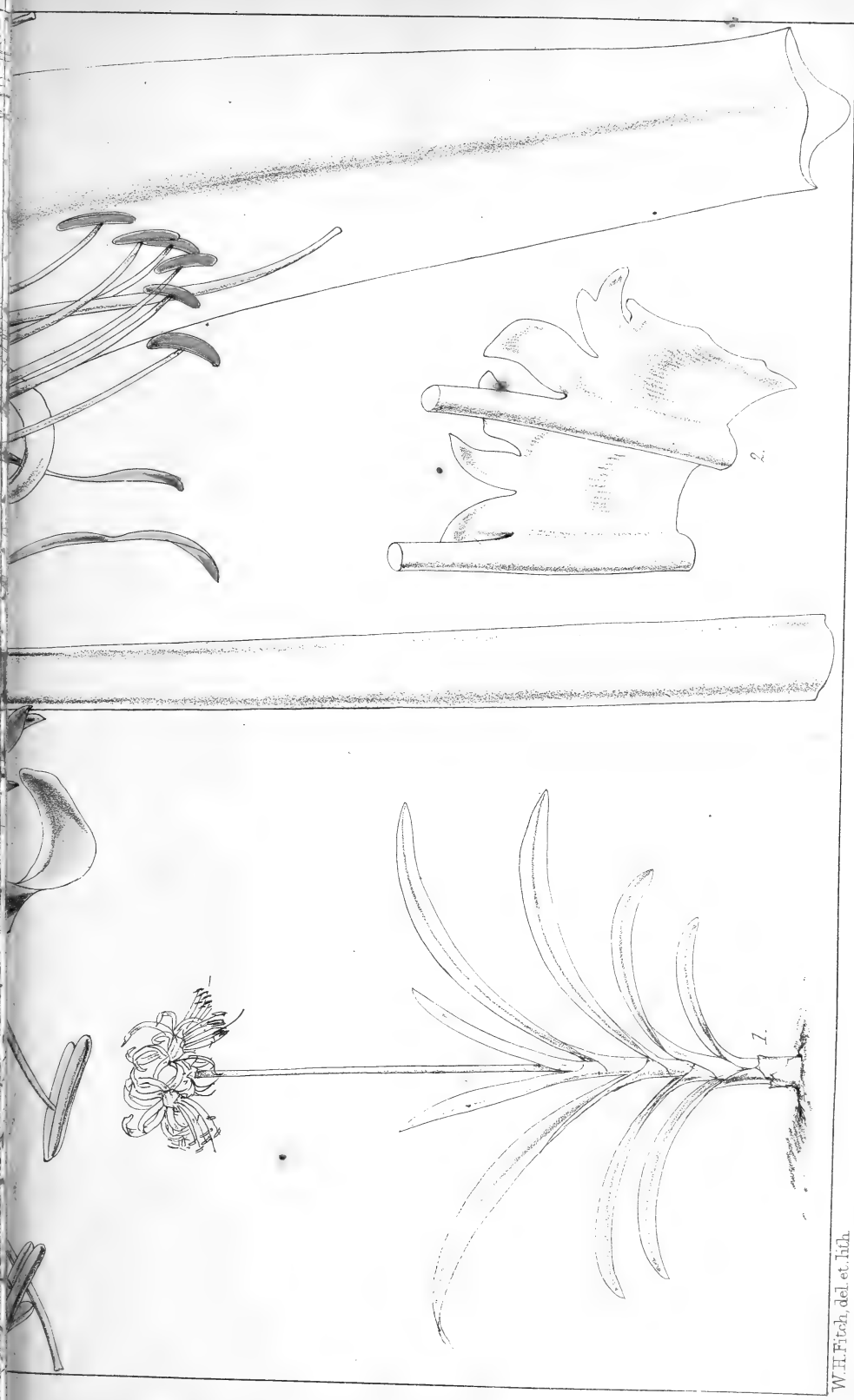
TAB. 263.—1, back view of leaf; 2, side view of leaf; 3, perianth: all magnified.—*J. G. B.*

I have before alluded to the proper treatment of the *Haworthia* section of the genus *Aloe* during the progress of this work, and I have nothing to add to the observations I have offered. If the present species receives the treatment I have referred to, it will thrive well and develop its delicate foliage, which constitutes the beauty of the plant. It was sent to me from South Africa by Mr. Thos. Cooper.—*W. W. S.*









Elisena longipetala, Herbert.

W.H.Fitch, del et lith.

J.N.Fitch, imp.

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TAB. 264.

Natural Order AMARYLLIDACEÆ.

Tribe PANCRTIÆ.

Genus ELISENA (*Herbert, Amaryll. p. 201*). Perianthium superum corollinum ovario oblongo, tubo supra ovarium subnullo, limbo rotato segmentis linearibus æqualibus. Corona faucialis magna campanulata horizontaliter compressa ad oram staminifera, inter filamentorum insertionem distincte dentata. Stamina 6, filamentis elongatis filiformibus leviter incurvis, antheris linearibus versatilibus. Ovarium inferum, triloculare, ovulis in loculo binis vel pluribus; stylus filiformis, perianthio subæquans; stigma punctiforme. Capsulam non vidi. Herbæ bulbosæ peruvianæ foliis distichis loratis floribus paucis umbellatis speciosis albis.

E. LONGIPETALA (*Herbert, Bot. Reg. 24, Misc. p. 79*). Foliis 6—8 distichis loratis sesquipedalibus, scapi tertio inferiore amplectantibus, scapo ancipiti tripedali, umbellis 4—6-floris, spathæ valvis 5—6 inæqualibus scariosis, pedicellis crassis perbrevibus, ovarii loculis biovulatis, limbi triuncialis segmentis linearibus undulatis apice recurvis, coronâ abrupte deflexa staminibus leviter incurvis subduplo brevior ad oram inter filamentorum insertionem distincte tridentata.—*Bot. Mag. t. 3873; Kunth, Enum. v. 657.*

A native of Peru; the specimen figured sent by Mr. Farris.

Bulb large, roundish, brown-tunicated. *Leaves* distichous, covering the lower third of the scape, three to four on a side, erecto-arcuate, lorate, eighteen to twenty inches long from where they leave the scape, two inches broad at the middle, moderately firm in texture, green on both sides, paler below, quite glabrous, veins immersed, the point narrowed suddenly. *Scape* two and a half to three feet high, strong, erect, distinctly two-edged. *Flowers* four to six in an umbel; *spathe* of several scariose linear and lanceolate valves an inch and a half to two inches long; *pedicels* very short and thick, barely distinguishable from the ovary. *Ovary* five-eighths of an inch deep, three-eighths of an inch thick, green. *Divisions of the limb* rotate, white, linear, three inches long, three lines broad at the base, the edge undulated, the point recurved. *Corona* fifteen lines deep, deflexed so as to be placed nearly at a right angle with the ovary, horizontally compressed, furnished with three distinct teeth between

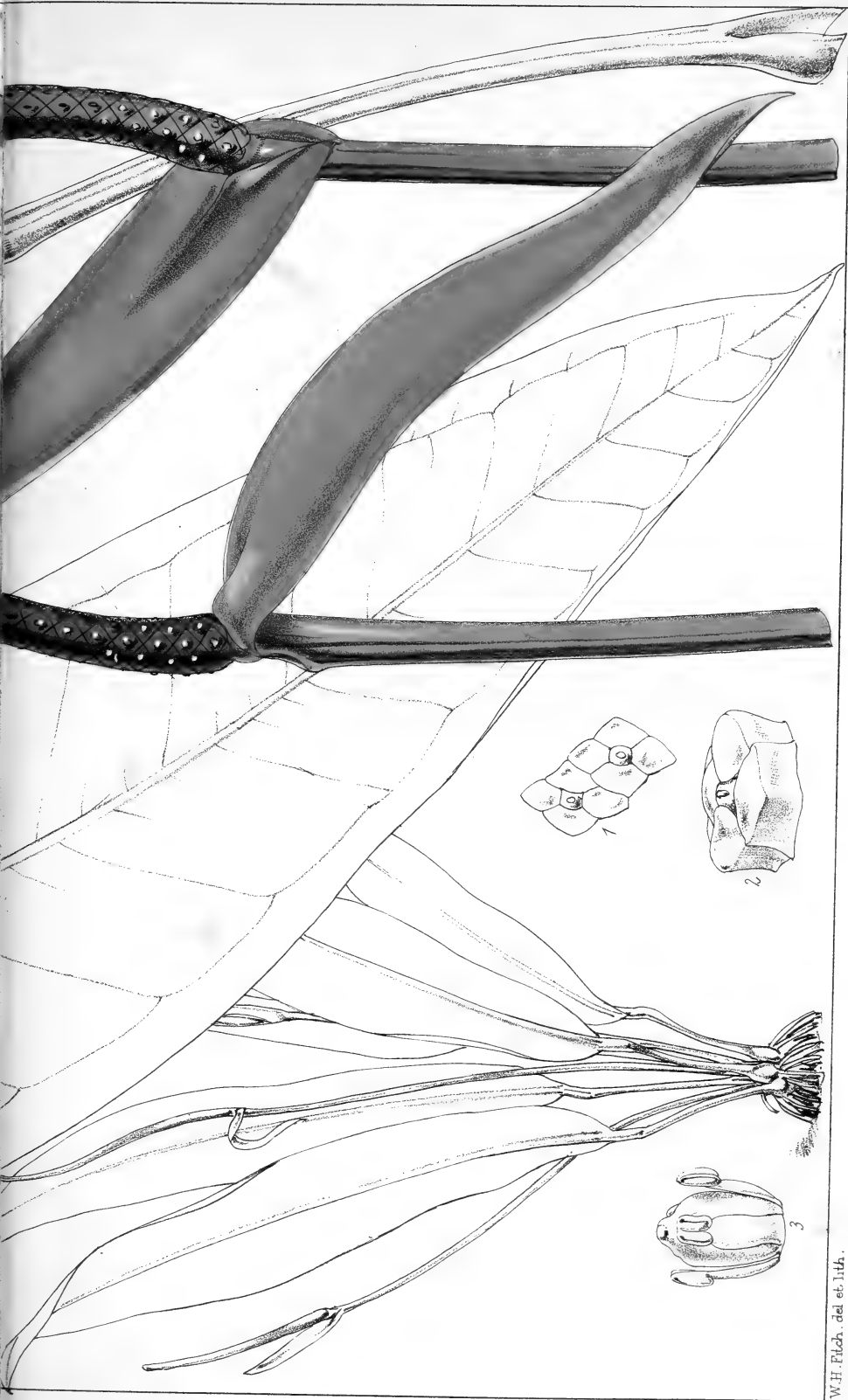
each filament. *Filaments* subequal, two inches long, slightly upcurved. *Style* filiform, slightly exceeding the stamens.

TAB. 264. — 1, whole plant, reduced ; 2, portion of the corona with the base of two filaments, magnified.—*J. G. B.*

I received this remarkable and ornamental plant from Mr. Farris, who collected bulbs of it in Peru. It flowers regularly each year, when grown in a warm moist atmosphere, and the bulbs well supplied with water as soon as they show signs of growth. When at rest the bulbs require only just enough water to keep them sound and healthy. Rich loam and leaf-mould is a mixture in which the plant grows freely, and to ensure flowering a strong bulb should be selected and grown singly in a deep pot. The plant makes many offsets, by which it can be easily increased.—*W. W. S.*







J.N. Fitch. imp

Anthurium rubricaulle, Kunth.

W.H. Fitch. del et lith.

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TAB. 265.

Natural Order AROIDEÆ.

Genus ANTHURIUM, Schott.

- A. RUBRICAULE (*Kunth, Enum.* iii. 69). Subacaulis, petiolis 6—12 poll. longis facie planis dorso acute carinatis, geniculis modice elongatis, foliis lanceolatis acutis basi subcuneatis 20—26 poll. longis medio 3—4 poll. latis coriaceis supra viridibus subtus pallidioribus penninerviis, venis primariis 16—20 erecto-patentibus subarcuatis in pseudoneuro continuo desinentibus, pedunculis viridibus petiolis subduplo excedentibus, spathis lanceolatis reflexis 4—5 poll. longis basi decurrentibus, spadicebus subsessilibus viridibus 7—8 poll. longis.—*Schott, Prodr.* p. 461.

A native of Brazil; our specimen sent by Bowman from the neighbourhood of Rio Janeiro.

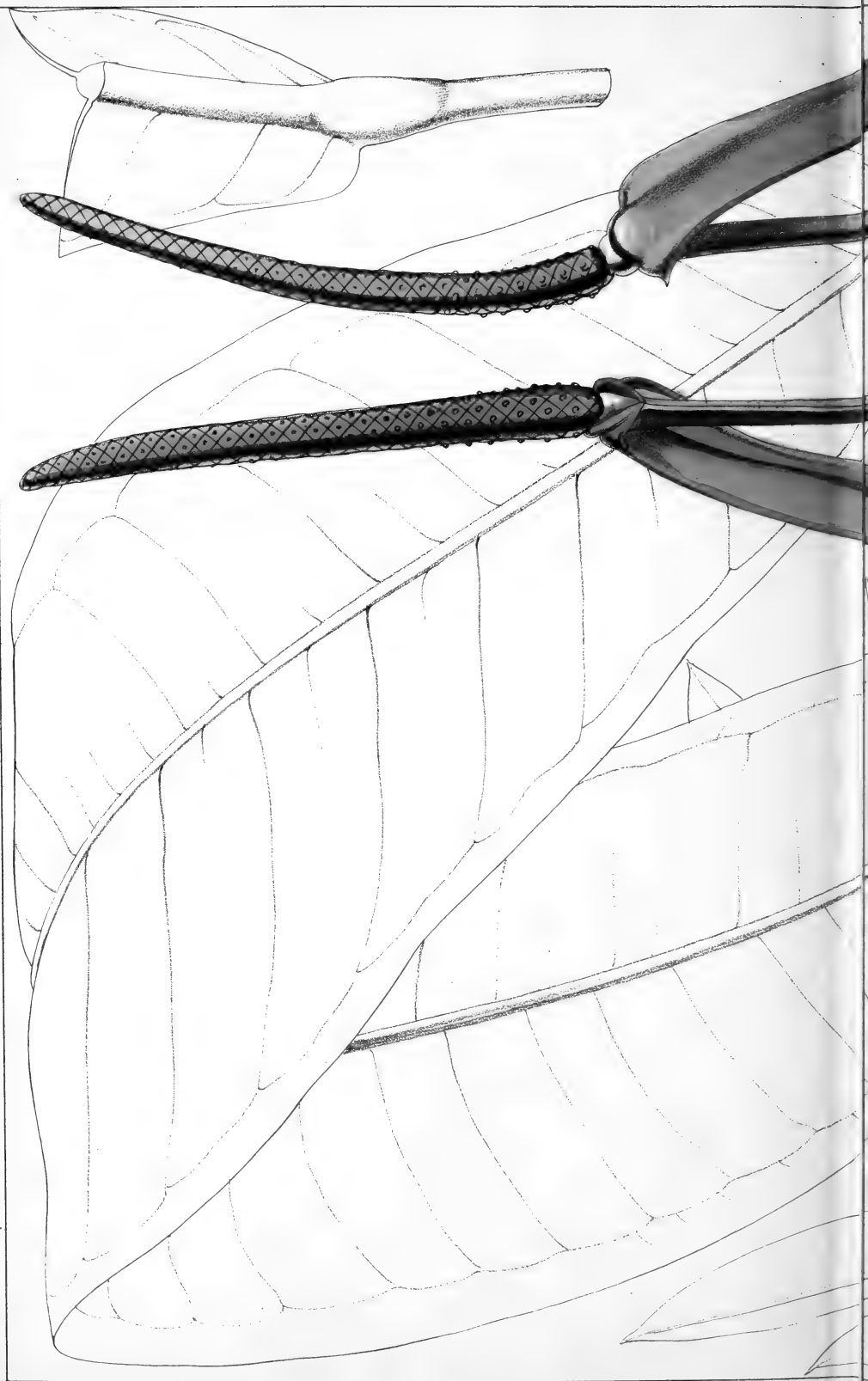
Scarcely at all caulescent. *Petioles* six inches to a foot long, one-fourth of an inch thick, flat on the face with slightly raised margins, the back acutely keeled. *Geniculum* half an inch long, moderately thickened. *Leaf* lanceolate, twenty to twenty-six inches long, three to four inches broad at the middle, acute, cuneately narrowed to a very slightly rounded base, coriaceous, bright green above, paler below; *main veins* sixteen to twenty, erecto-patent, slightly arching; *pseudo-nerve* very distinct, continuous from the base to the apex at a distance of three to four lines from the edge. *Peduncle* greenish, twice as long as the petioles. *Spathe* lanceolate-acuminate, four to five inches long, reddish green, decurrent at the base, finally reflexed. *Spadix* subsessile, greenish, seven to eight inches long.

TAB. 265. — 1, pair of flowers viewed from above; 2, single flower viewed from the side; 3, ovary with stamens: all magnified.—*J. G. B.*

I have for many years collected and grown as many species of the genus *Anthurium* as I could procure, with a view of better understanding these curious and interesting plants, so little studied, and the garden nomenclature of which is in great confusion. I find the cultivation of the species easy, if certain conditions, to be detailed hereafter, be properly attended to; but I find also the determination of the species attended with much difficulty, chiefly from the want of good figures made from the living plant, to which the student can refer. To aid in a better

knowledge of the species I have thought it desirable to publish in the REFUGIUM BOTANICUM a series of figures illustrating such species most requiring their characters to be brought out by careful drawing. In the present number this series is commenced, and I hope to continue it as opportunity may permit. The species thrive well when grown in a moist stove, sheltered, when required, from hot sunshine, and potted in a very spongy soil of peat and sphagnum, and liberally supplied with water at all times, but especially during the season of growth. *Anthurium rubricaulis*, Plate 265, is a nearly stemless free-flowering species, with long, pointed, bright green leaves, and reddish green spathes, which together have a pleasing appearance. My first acquaintance with this plant in the living state was from specimens sent me from the vicinity of Rio by the late D. Bowman. —W. W. S.







J.N. Fitch imp.

W.H. Fitch del. et lith.

Anthurium Harrisii, Endl.

TAB. 266.

Natural Order AROIDEÆ.

Genus ANTHURIUM, Schott.

- A. HARRISII, Endl. Gen. p. 240. Caulescens, petiolis strictis pedem attingentibus facie leviter sulcatis, geniculis perbrevibus valde incrassatis, foliis lanceolatis acutis basi distincte rotundatis 16—24 poll. longis supra medium 3—4 poll. latis coriaceis supra viridibus, subtus pallidioribus, penninervis veniis permultis tenuibus arcuato-patentibus in pseudoneuro cum margine prope basin confluyente anastomosantibus, pedunculis brunneo-rubellis foliis paullo excedentibus, spathis reflexis lanceolatis cuspidatis $2\frac{1}{2}$ —3 poll. longis, spadiceis rubellis spathis sesqui longioribus.—Schott, Prodr. p. 455. *Pothos Harrisii*, Graham in Edin. Phil. Journ. April, 1826; Hook. Exot. Flora, t. 211; Lodd. Bot. Cab. t. 1301.

A native of Brazil.

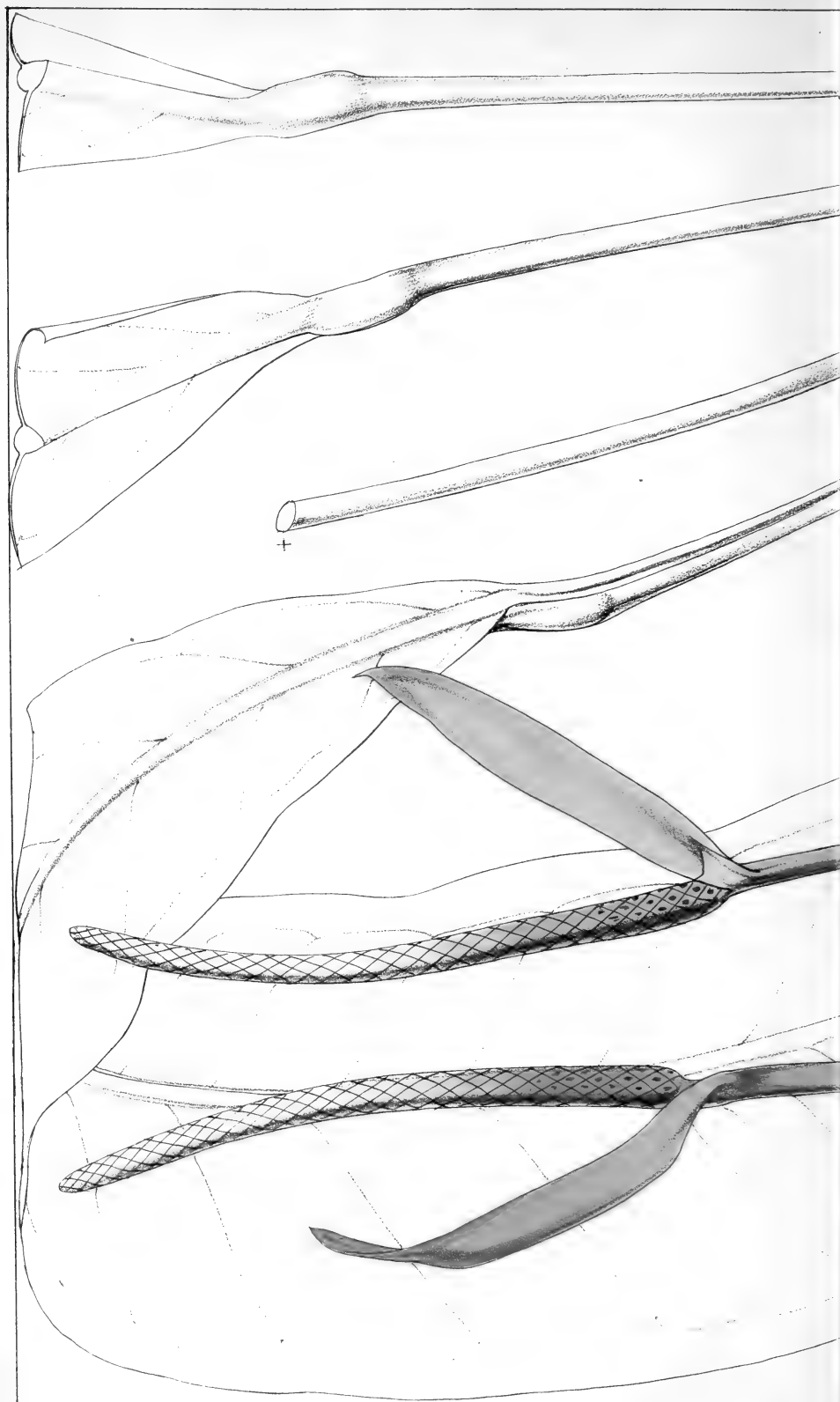
Caudex assurgent, half a foot long in the specimen drawn. *Petioles* eight to twelve inches long, erect, one-fourth of an inch thick, rounded on the back, slightly sulcate down the face. *Geniculum* three to four lines long, very tumid. *Leaves* lanceolate, sixteen to twenty-four inches long, three to four inches broad two-thirds of the way up, narrowed rather suddenly to an acute point, gradually from the middle to a distinctly rounded base, coriaceous, the upper surface bright green, lower paler, the edge standing forward, especially at the lower part of the leaf from the midrib, which is rounded on the back in the young leaves, but becomes acute as they grow older; *veins* fine, very numerous, spreading from the midrib at an angle of seventy to eighty degrees, slightly arcuate; *pseudo-nerve* very distinct, parallel with the edge at a distance of two to three lines from it, running into it near the base. *Peduncle* terete, slightly exceeding the petiole, reddish brown. *Spathe* reflexed, lanceolate, cuspidate, two and a half to three inches long, reddish green. *Spadix* subsessile, cylindrical, bright red, half as long again as the spathe.

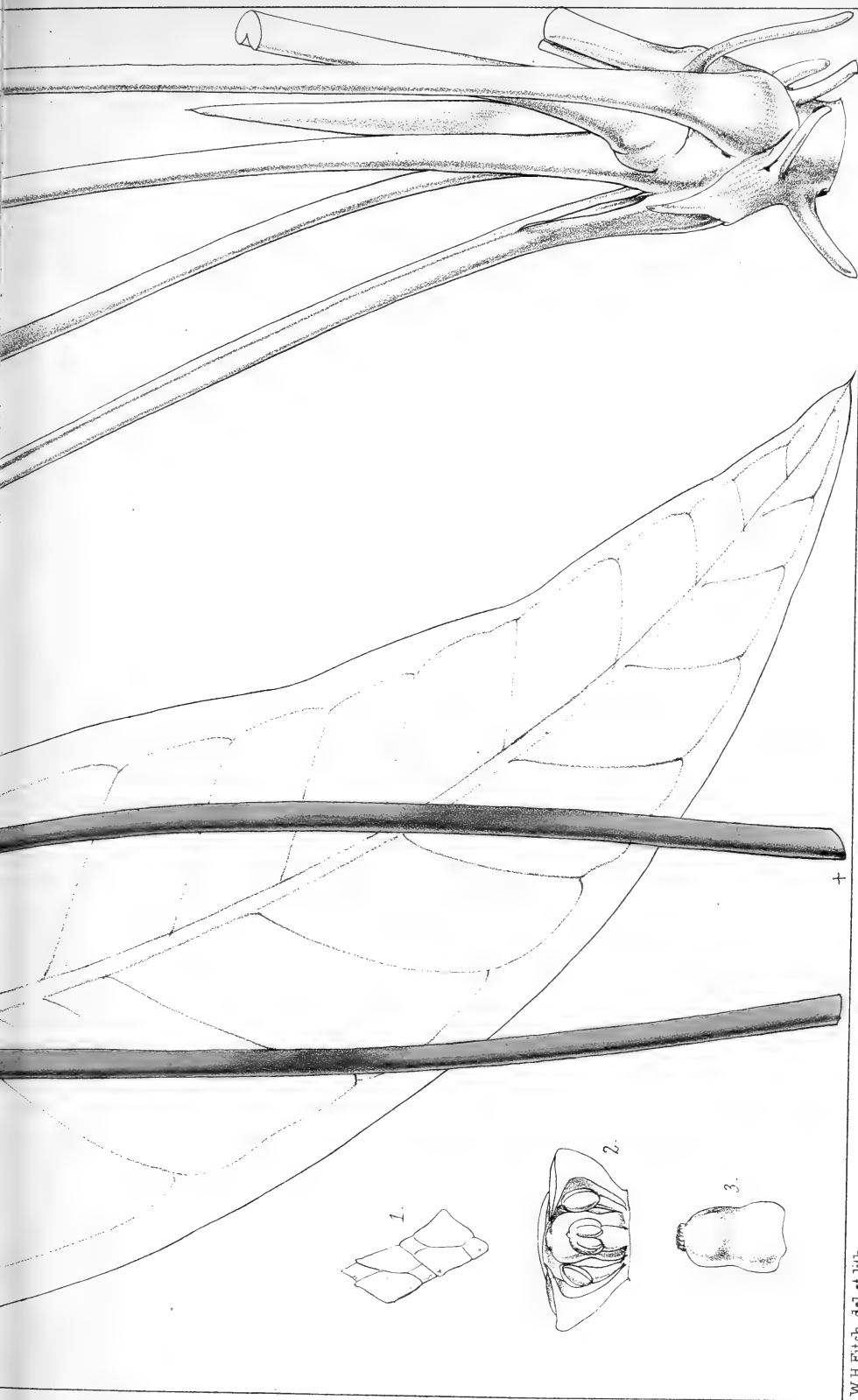
TAB. 266.—1, pair of flowers viewed from above; 2, single flower viewed from the side; 3, ovary with stamens: all magnified.—J. G. B.

I have had this plant under cultivation for a great many years, and I am not certain now of the source from which it was obtained. It makes a short stem, producing abundance of roots, is easy of cultivation, and its bright red spadix catches the eye in a pleasing manner when the plant is in flower.—W. W. S.









J. N. Fitch. imp.

Anthurium Urvilleanum, Schott.

W. H. Fitch. del. et lith.

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TAB. 267.

Natural Order AROIDEÆ.

Genus ANTHURIUM, Schott.

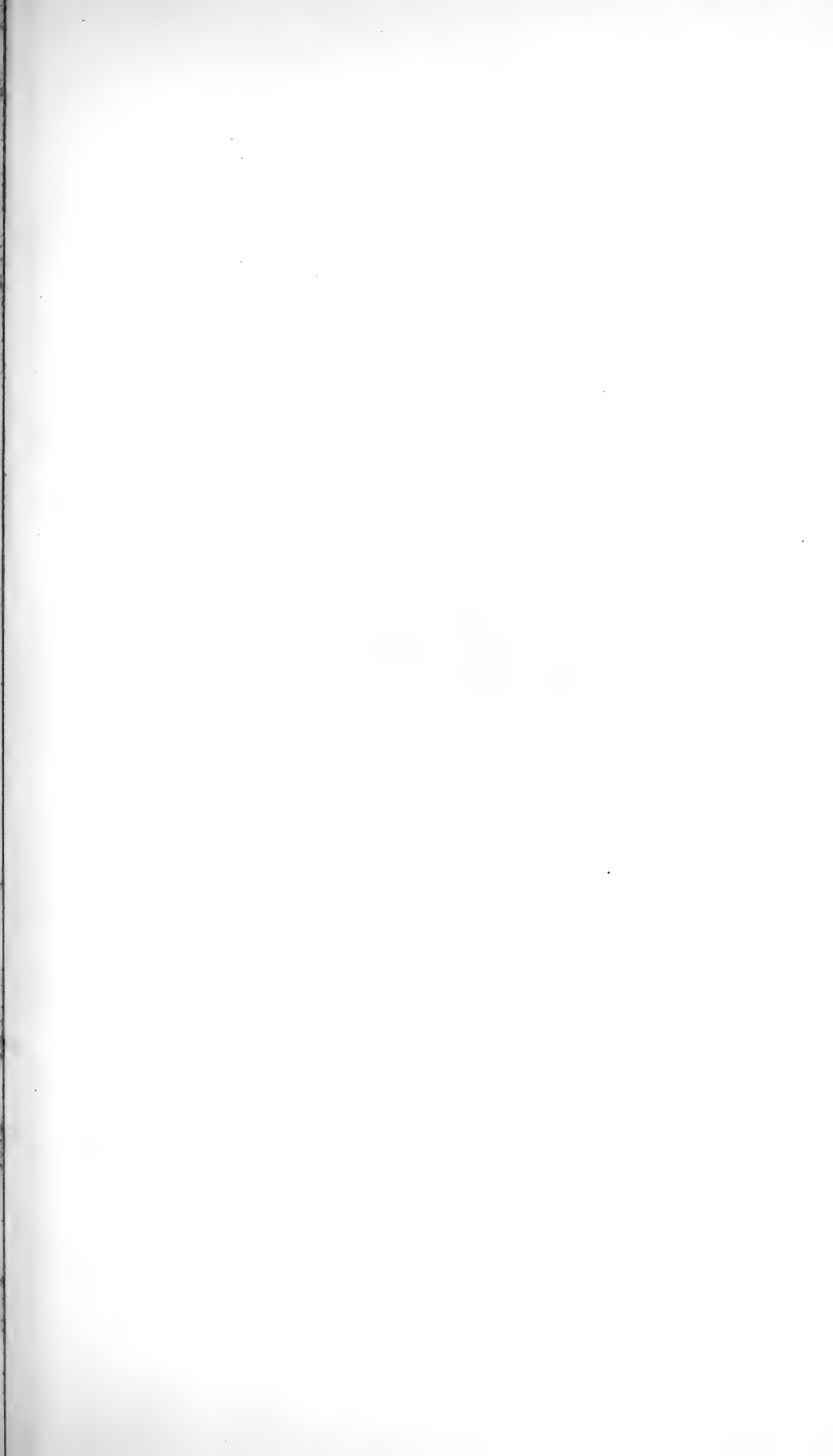
- A. URVILLEANUM (Schott, *Prodr. Aroid.* p. 459). Breviter caulescens, petiolis 8—9 poll. longis facie planis dorso teretibus, geniculis modice elongatis, foliis lanceolatis acutis basi cuneatis 18—20 poll. longis $3\frac{1}{4}$ —4 poll. latis subcoriaceis supra saturate viridibus subtus pallidioribus, venis primariis 12—15 erecto-patentibus in pseudo-neuro deorsum cum margine confluyente desinentibus, pedunculis viridibus petiolis subduplo excedentibus, spathis lanceolatis viridibus erecto-patentibus $2\frac{1}{2}$ —3 poll. longis, spadicebus breviter pedicellatis rubello-viridibus 4 poll. longis.

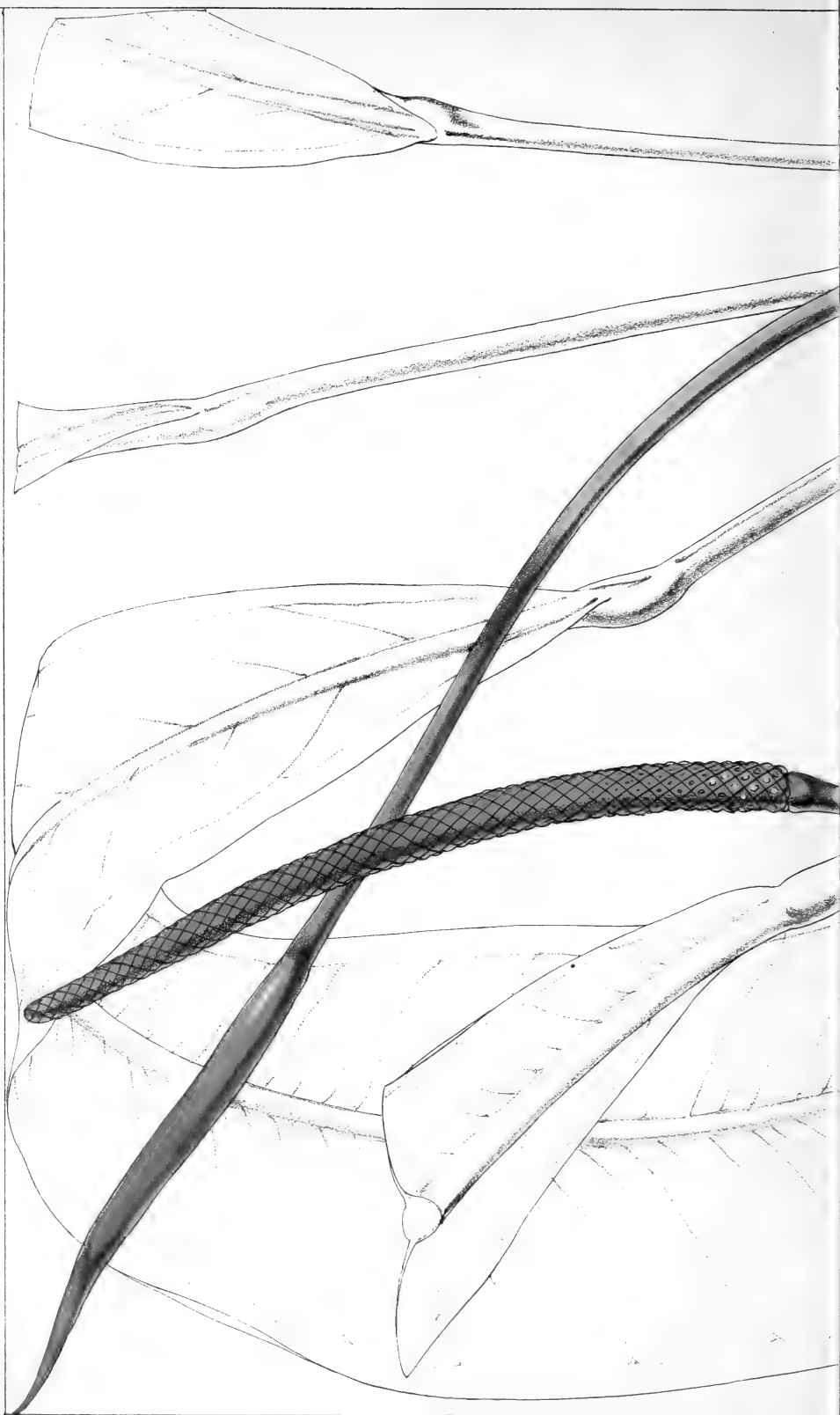
A native of Brazil.

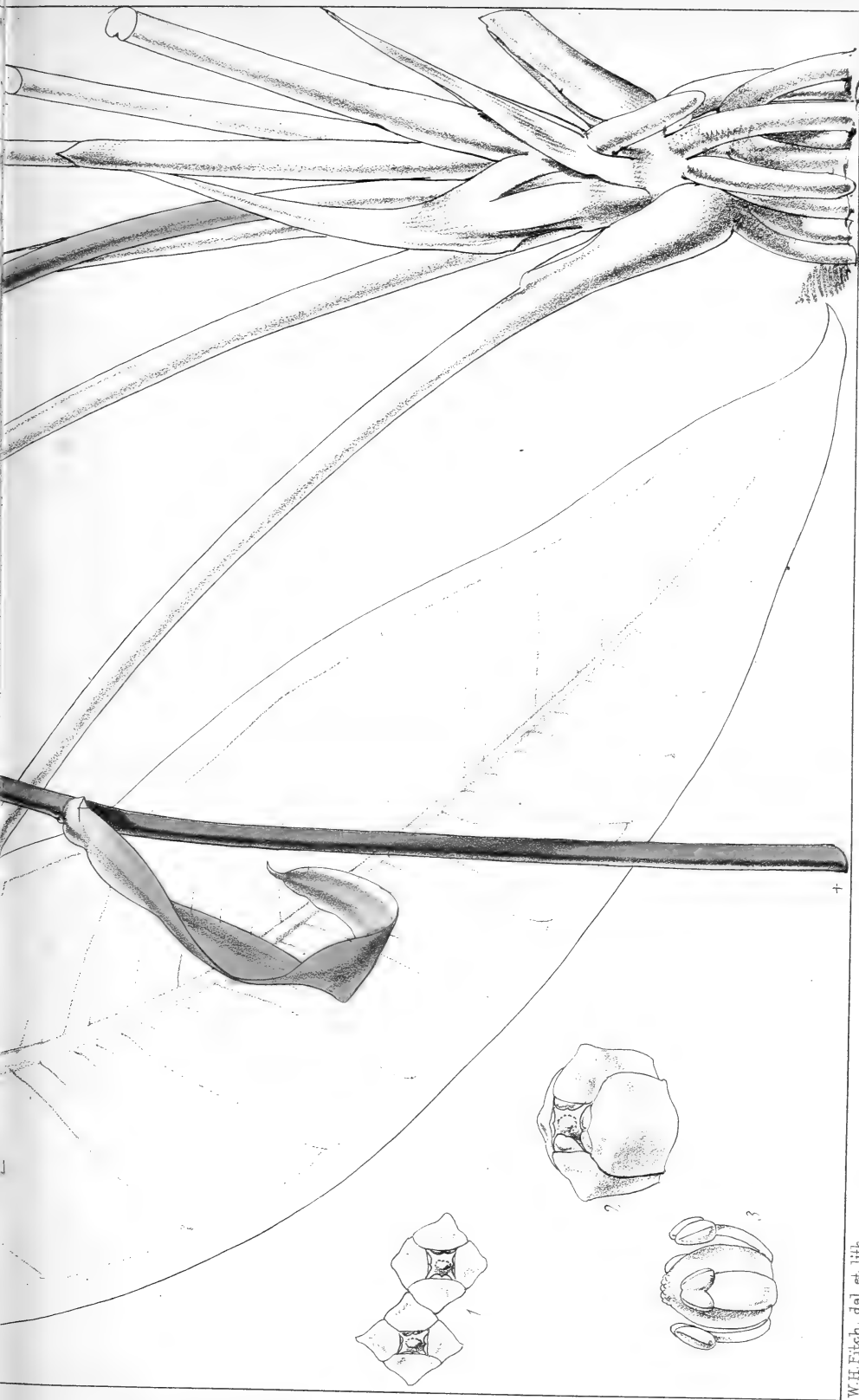
Caudex assurgent, reaching half a foot long in our specimen. *Petiole* eight to nine inches long, flat on the face with a cartilaginous edge, rounded on the back, one-fourth of an inch thick. *Geniculum* three-eighths to half an inch long. *Leaf* lanceolate, eighteen to twenty inches long, three and a half to four inches broad two-thirds of the way up, acute, narrowed gradually from the middle to a cuneate base, rather less coriaceous in texture than in its allies here included, dark green above, paler beneath; *main veins* twelve to fifteen, erecto-patent, slightly arcuate; *pseudo-nerve* three to four lines distant from the edge in the upper part, continuous except at the very base of the leaf. *Peduncle* greenish, terete, about twice the length of the petiole. *Spathe* narrow-lanceolate, erecto-patent, greenish, two and a half to three inches long. *Spadix* shortly stipitate, slender, four inches long, greenish when young, tinged with purple when mature.

TAB. 267.—1, pair of flowers, unopened, viewed from above; 2, vertical section of a flower; 3, ovary: all magnified.—J. G. B.

This is an unattractive species, producing but few leaves upon a short stem well covered with roots. I have grown it for many years, and I believe I first obtained it from one of the Belgian nurseries.—W. W. S.







J.N. Fitch imp.

Anthurium Gaudichaudianum, Kunth.

W.H. Fitch. del et lith.

OF THE
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TAB. 268.

Natural Order AROIDEÆ.

Genus ANTHURIUM, Schott.

- A. GAUDICHAUDIANUM (*Kunth, Enum. iii. 74*). Subacaulis, petiolis 8—10 poll. longis teretibus, geniculis brevibus, foliis lanceolatis acutis basi cuneatis 16—20 poll. longis medio 2—3 poll. latis coriaceis supra viridibus subtus pallidioribus penninerviis venis permultis tenuibus arcuato-patentibus in pseudoneuro deorsum cum margine confluyente desinentibus, pedunculis viridibus gracilibus petiolis duplo excedentibus, spathis lanceolatis reflexis pallide viridibus 3 poll. longis, pedicellis pollicaribus, spadicebus gracilibus cylindricis viridibus spathis sesqui longioribus.—*Schott, Prodr. p. 459.*

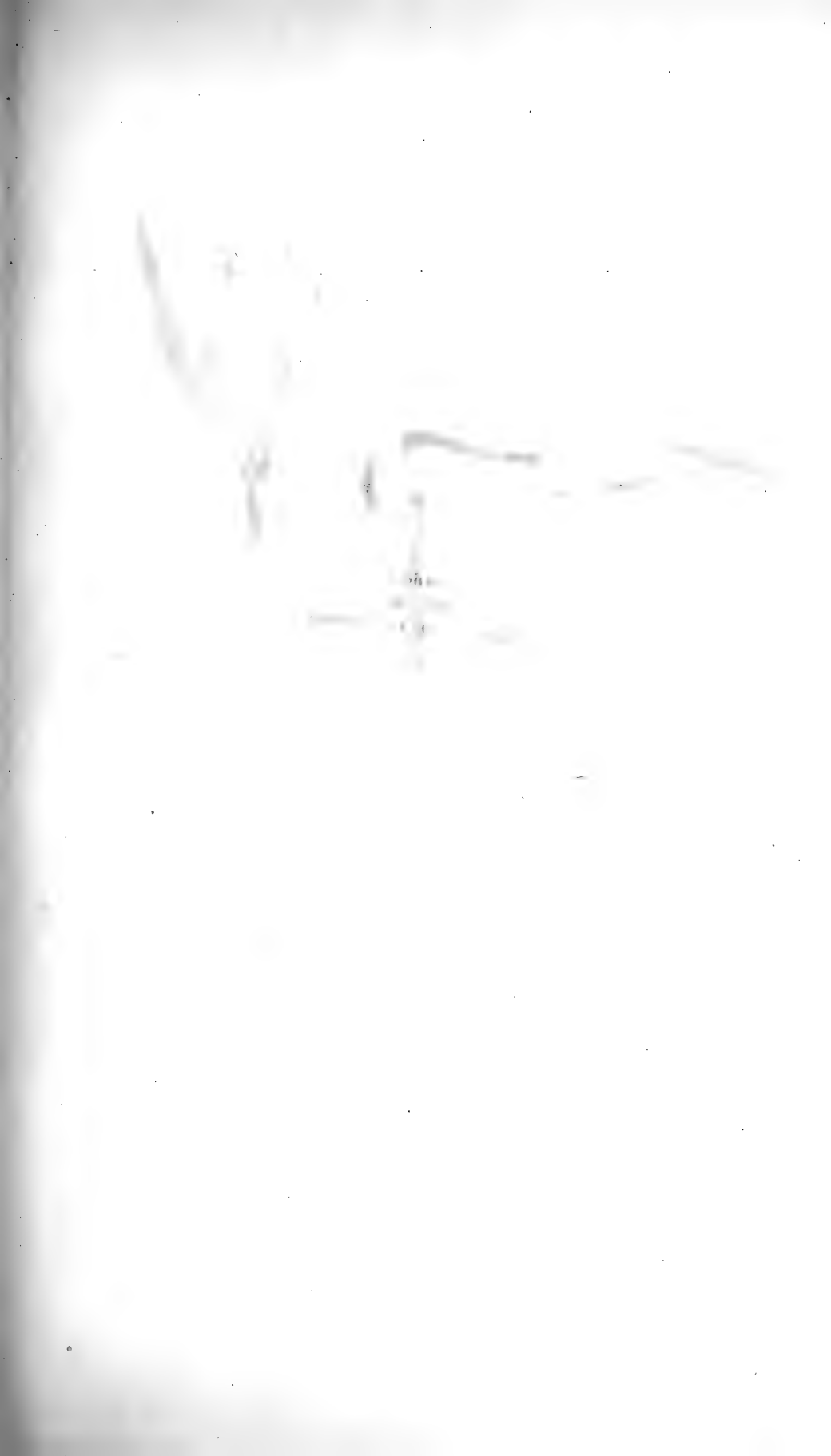
A native of the Province of Santa Catherina, South Brazil; discovered by Gaudichaud.

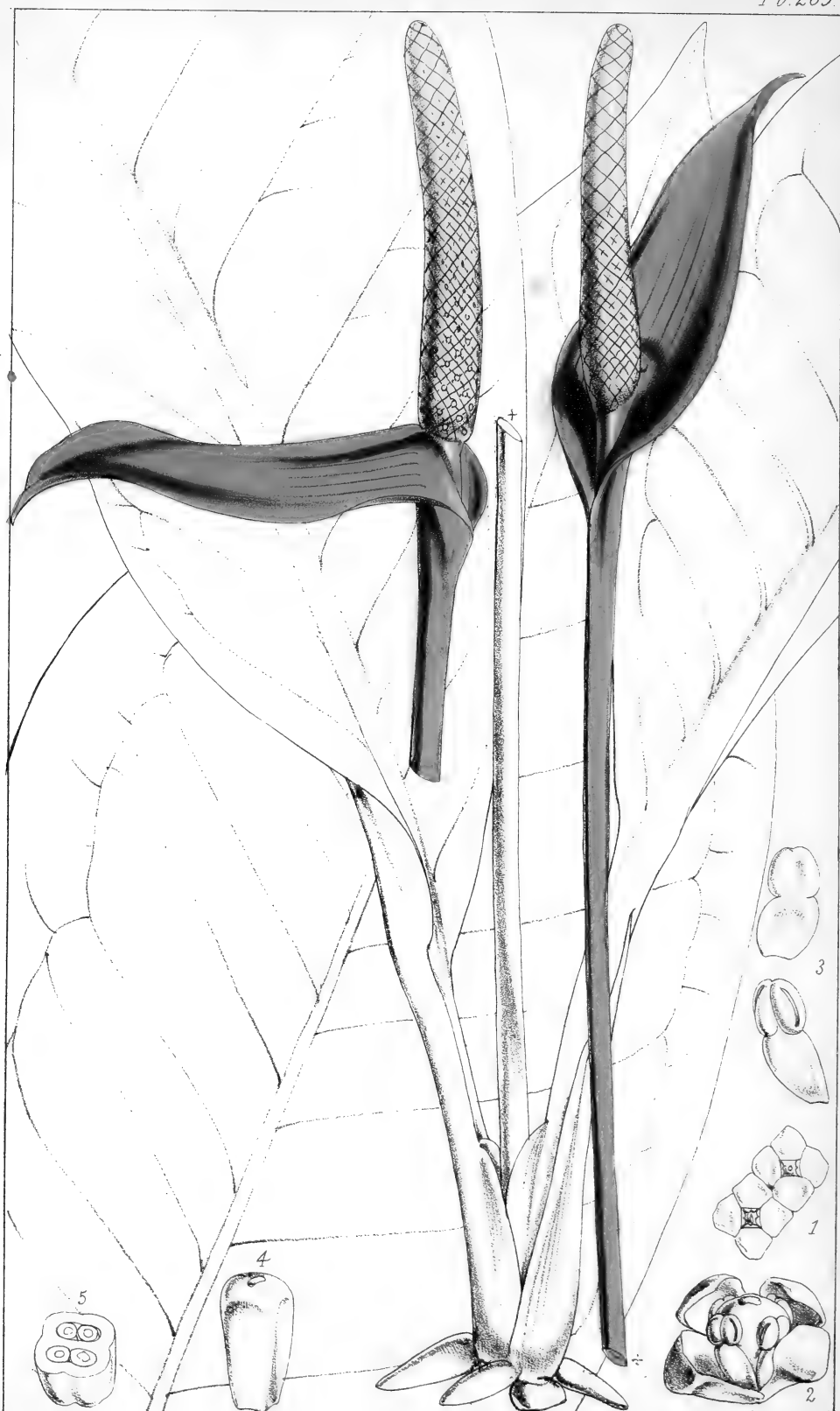
Scarcely at all caulescent. *Petioles* eight to ten inches long, one-fourth of an inch thick, quite terete, slightly glaucous. *Geniculum* one-fourth to three-eighths of an inch long, moderately incrassated, always distinctly bent. *Leaves* lanceolate, sixteen to twenty inches long, two to three inches broad at the middle, narrowed about equally to both ends, acute, cuneate at the base, bright green above, paler beneath, coriaceous; the prominent *midrib* bluntly rounded on both faces; *veins* very fine, immersed, indistinct, slightly arcuate, spreading from the midrib at an angle of sixty to seventy degrees; *pseudo-nerve* distinct about three-quarters of the way down at a distance of two to three lines from the edge. *Peduncles* slender, terete, twice as long as the petioles. *Spathe* pale green, lanceolate, reflexed, three inches long. *Spadix* slender, green, four to five inches long, mounted on a slender *pedicel* an inch long.

Near *A. Harrisii*, from which it differs principally by its leaves cuneate at the base, green spathe and spadix, and especially by the remarkably elongated pedicel.

TAB. 268.—1, pair of flowers viewed from above; 2, single flower viewed from the side; 3, ovary with stamens: all magnified.—*J. G. B.*

Several species of *Anthurium* much resemble each other, and are often confounded if their characters are not carefully considered. The present species is very likely to be misunderstood, but if the differences pointed out be attended to they will well distinguish the species. It is nearly stemless, and produces many lanceolate bright green leaves. I obtained my original plant from Mons. L. Van Houtte, of Ghent.—*W. W. S.*





W.H. Pitch del et lith.

J.N. Pitch imp.

Anthurium Dombeyanum, Brong.

TAB. 269.

Natural Order AROIDEÆ.

Genus ANTHURIUM, Schott.

- A. DOMBEYANUM (*Brong. in Schott, Prodr. Aroid. p. 477*). Caudice brevi decumbente, petiolis $1\frac{1}{2}$ —2 poll. longis, geniculis brevibus, foliis oblanceolato-spathulatis 10—12 poll. longis supra medium $4\frac{1}{2}$ —5 poll. latis basi paullo rotundatis subcoriaceis supra saturate viridibus subtus pallidioribus, venis primariis 12—15 erecto-patentibus in pseudoneuro irregulari interdum duplici desinentibus, pedunculis subpedalibus, spathis lanceolatis patentibus viridibus 2—2 $\frac{1}{2}$ poll. longis basi valde decurrentibus, spadicebus viridibus vix stipitatis spathis paulo excedentibus.

Our specimen was procured from Linden, who obtained it from the forests of the Rio Branco, one of the northern branches of the Amazon about half-way up the river.

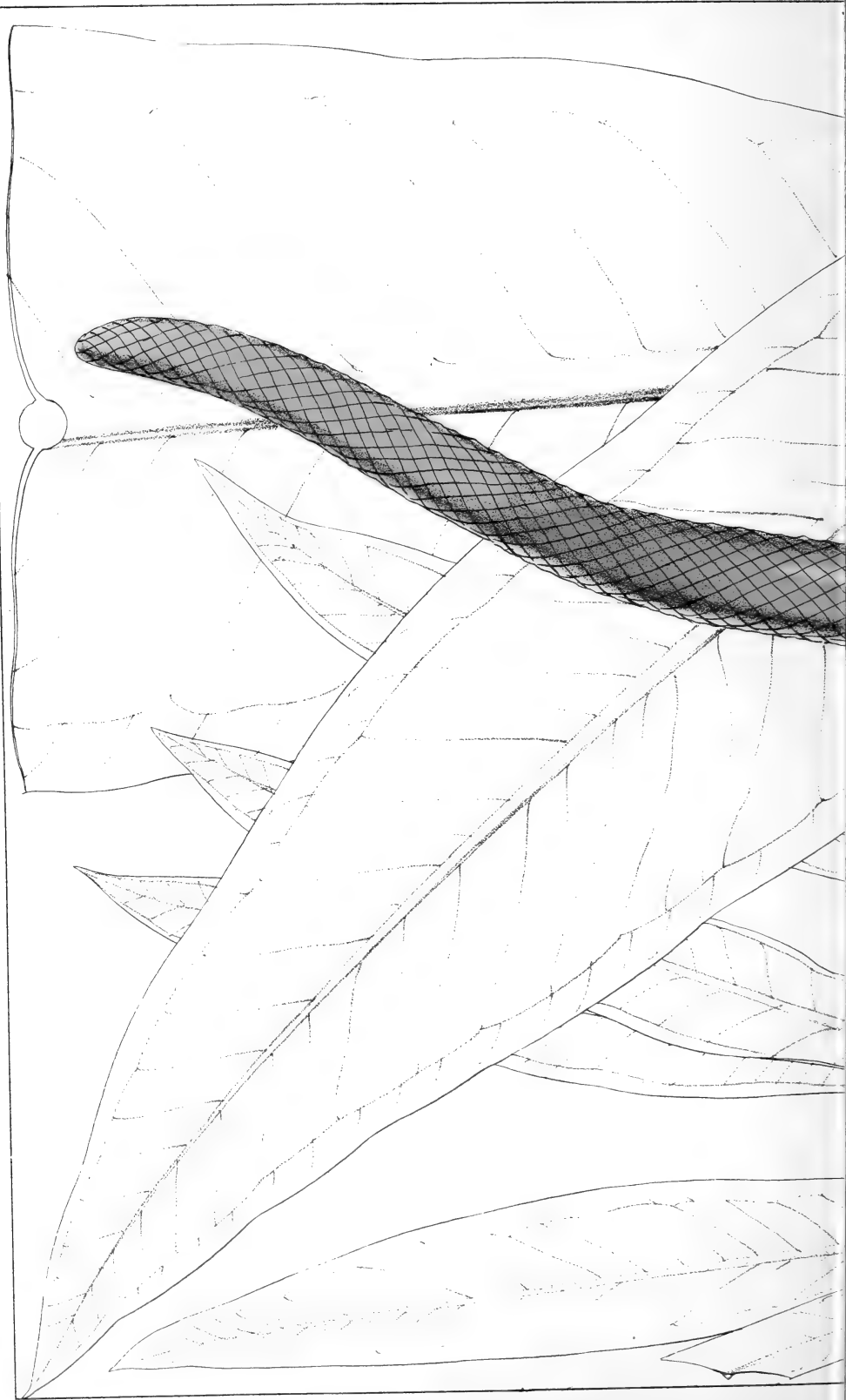
Caudex short, decumbent. *Petioles* erect, an inch and a half to two inches long, greenish, slightly mottled with gray, one-fourth of an inch thick. *Geniculum* three to four lines long, not much swollen. *Leaves* oblanceolate-spathulate, a foot long, four and a half to five inches broad three-quarters of the way up, acute, slightly rounded at the base, subcoriaceous, bright dark green above, paler below; *main veins* twelve to fifteen, erecto-patent; *pseudo-nerve* irregular, sometimes as if doubled. *Peduncle* green, erect, slender, terete, reaching a foot long. *Spathe* lanceolate, green, ultimately patent, two to two and a half inches long, conspicuously decurrent at the base. *Spadix* green, stout, scarcely stalked, two and a half to three inches long.

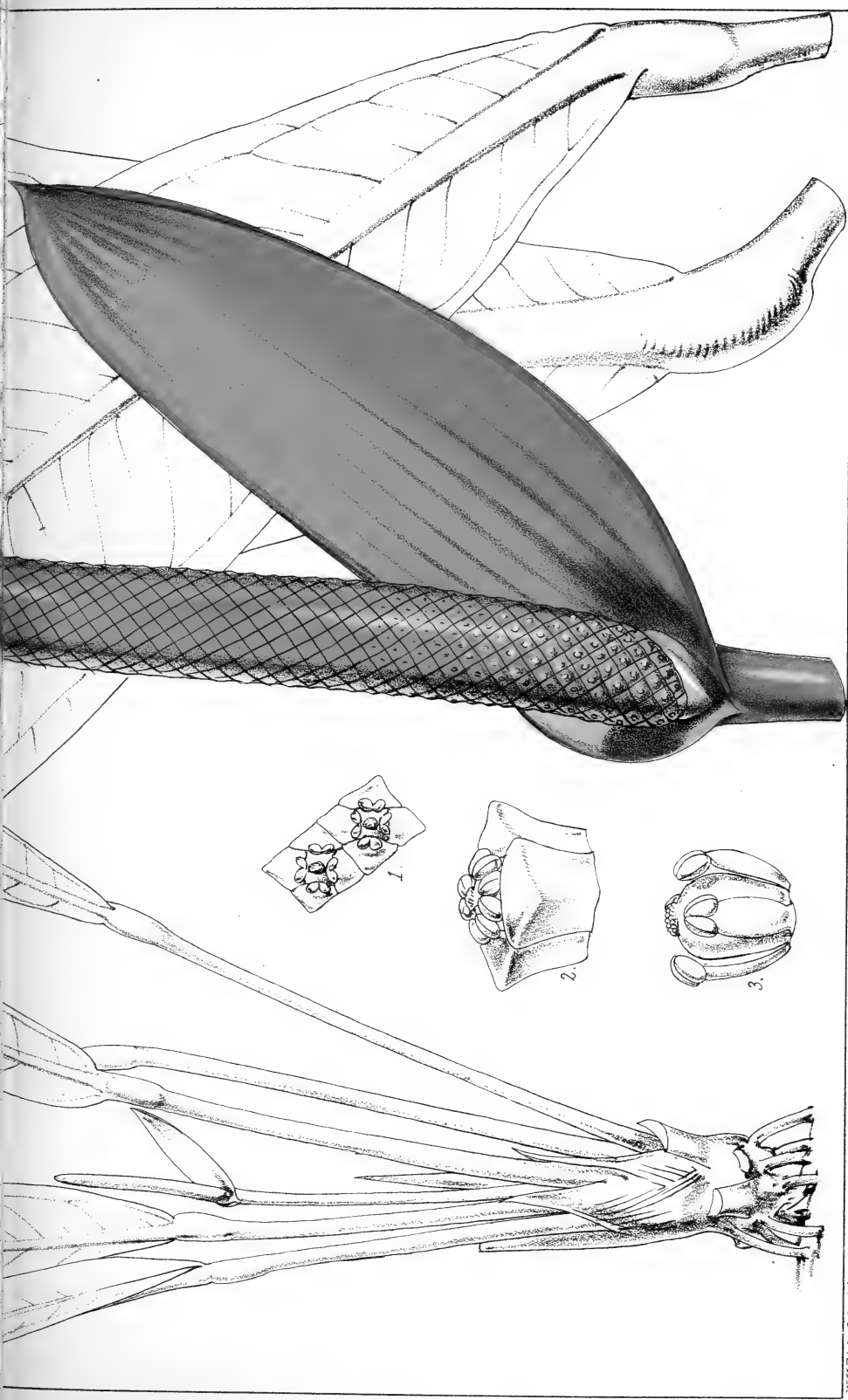
Our only ground for calling this *A. Dombeyanum* is that it agrees fairly with Schott's original description of the plant so called, which was taken from a drawing of a specimen from Peru in the Paris Museum.

TAB. 269.—1, pair of flowers viewed from above; 2, a single flower opened; 3, stamens; 4, ovary; 5, horizontal section of ovary: all magnified.—J. G. B.

A dwarf free-flowering species, with the peduncle rigid and erect. The leaves are few in number, broad and bright green. A rare and interesting species, seldom seen in collections of growing plants. I received it from Mons. Linden, of Brussels.—W. W. S.

1880
1881
1882





Anthurium coriaceum, Endlich.

W.H. Fitch, del. et lith.

J.N. Fitch, imp.

THE
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OF THE
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TAB. 270.

Natural Order AROIDEÆ.

Genus ANTHURIUM, Schott.

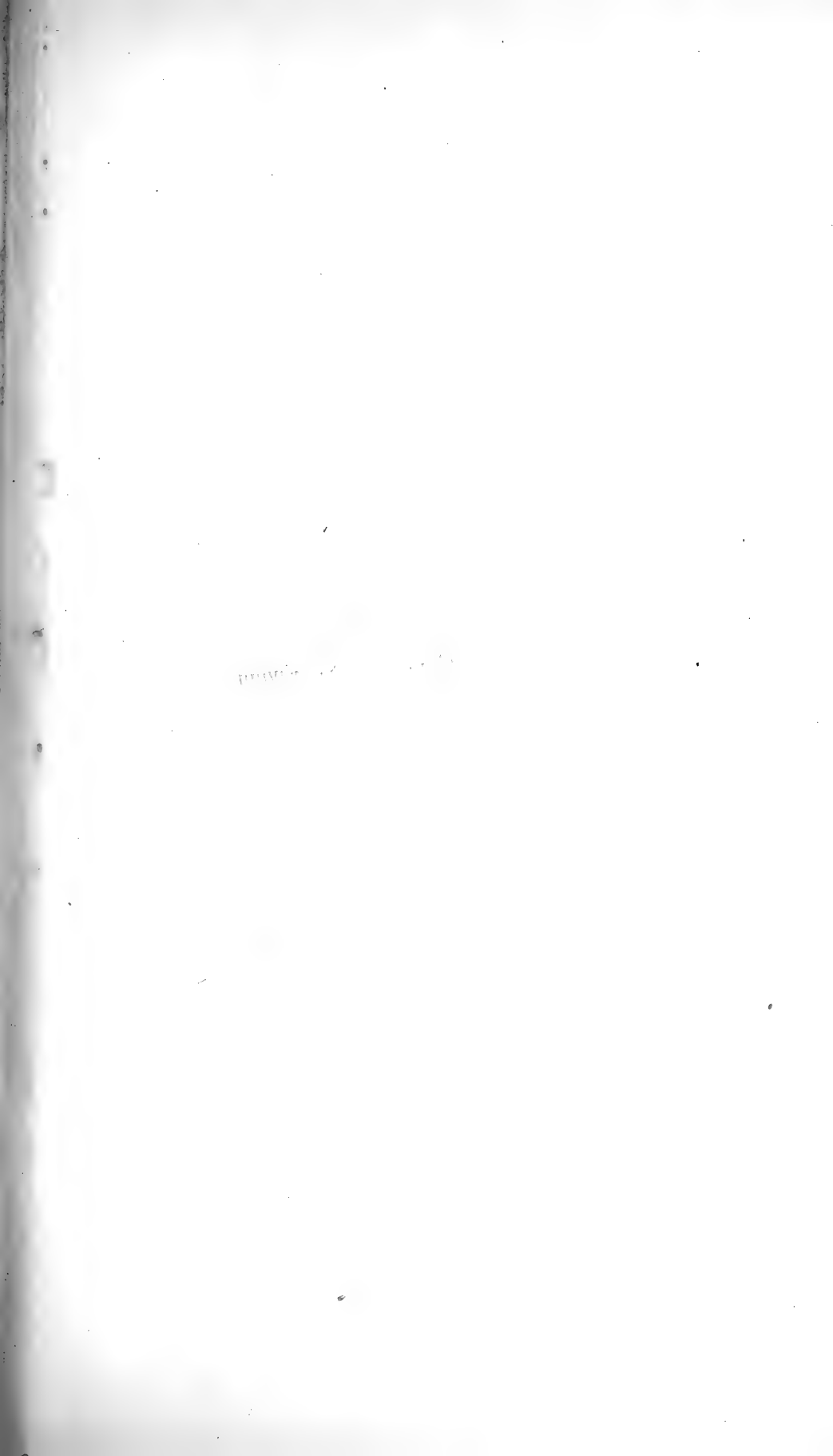
- A. CORIACEUM (Endl. Gen. p. 240). Subacaulescens, petiolis validis subteretibus 15—18 poll. longis, geniculis crassis subpollicaribus, foliis oblanceolato-oblongis $2\frac{1}{2}$ —3 ped. longis supra medium 6—8 poll. latis deorsum cuneatis basi leviter rotundatis coriaceis utrinque glauco-viridibus, venis primariis 35—40 tenuibus erecto-patentibus in pseudoneurum continuum desinentibus, pedunculis viridibus petiolis æquantibus vel paullo longioribus, spathis lanceolatis viridibus purpureo marginatis $4\frac{1}{2}$ —5 poll. longis, spadicibus crassis subsessilibus pallide brunneis 8—9 poll. longis. — Schott, Prodr. Aroid. p. 480. *A. glaucescens*, Kunth, Enum. iii. 73.

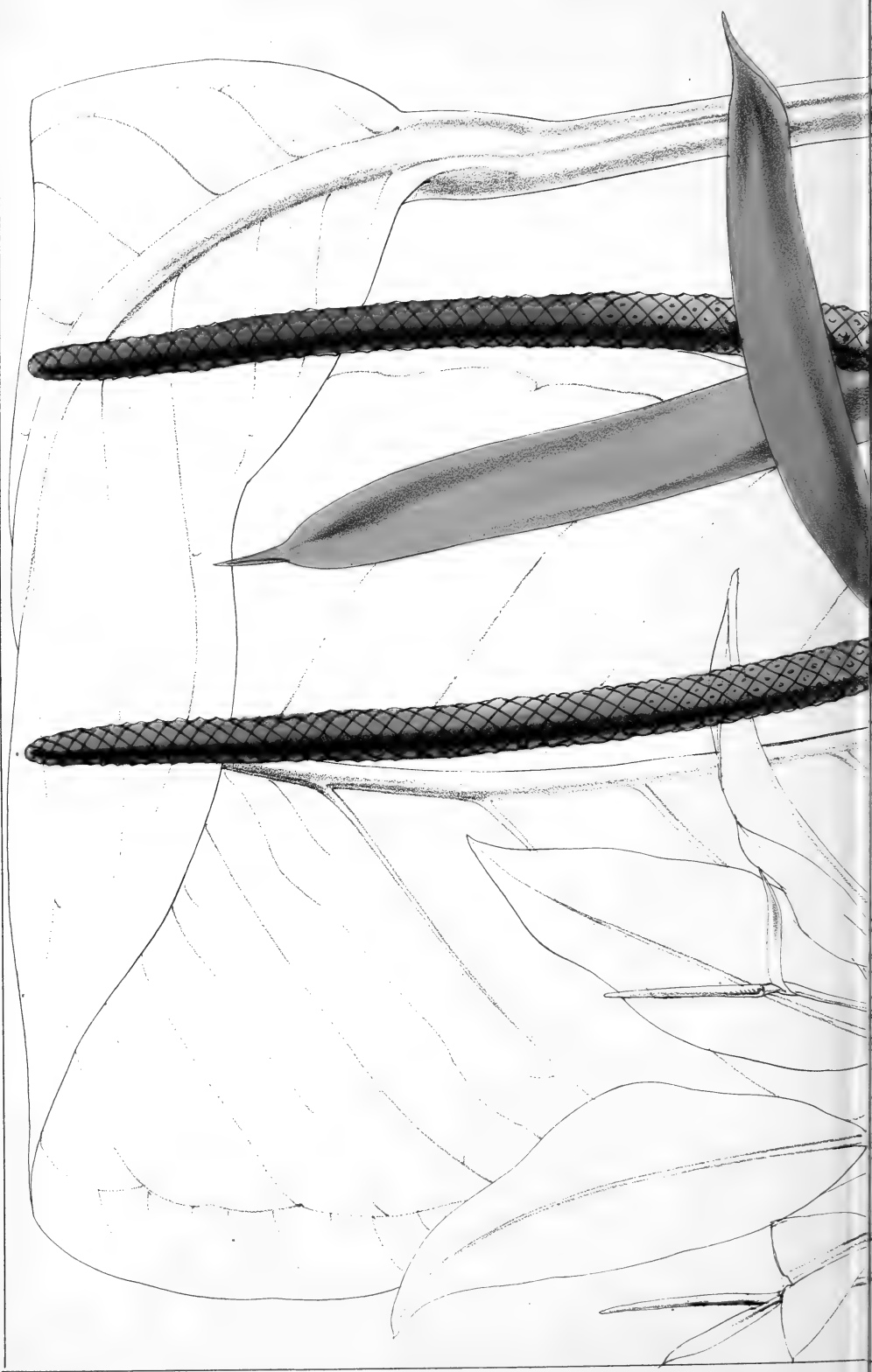
A native of the southern provinces of Brazil.

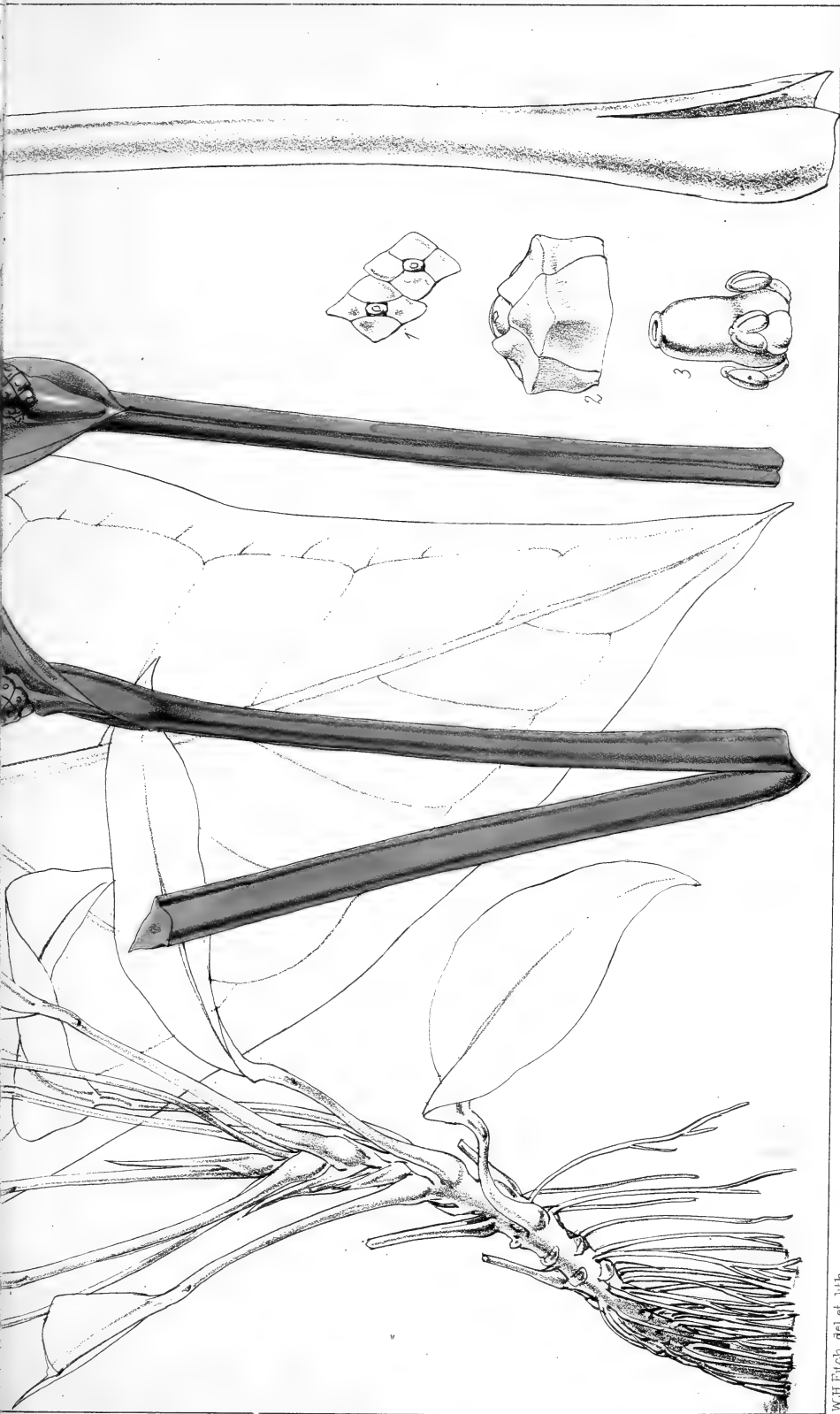
Subacaulescent. *Petioles* fifteen to eighteen inches long, very strong, half an inch thick, subterete, glaucous-green. *Geniculum* an inch long, three-fourths of an inch thick. *Leaves* oblanceolate-oblong, two and a half to three feet long, six to eight inches broad above the middle, acute, cuneately narrowed to a slightly rounded base, very coriaceous, the surface undulated, both sides glaucous-green; *veins* fine, immersed, the main ones thirty-five to forty, erecto-patent; *pseudo-nerve* continuous, very fine, distant, three-eighths to half an inch from the edge. *Peduncle* equalling or slightly exceeding the petioles, green, terete, three-eighths of an inch thick. *Spathe* lanceolate, erecto-patent, green bordered with purple, four to five inches long, sixteen to eighteen lines broad. *Spadix* subsessile, pale sandy brown, eight to nine inches long, eight to nine lines thick.

TAB. 270. — 1, pair of flowers viewed from above; 2, single flower viewed from the side; 3, ovary with stamens: all magnified.—J. G. B.

This fine effective species, with long very thick rigid leaves, I originally obtained from Mons. L. Van Houtte, of Ghent. The plant is stemless and easy of cultivation, producing slowly its large leaves, which last for a long period in good condition. — W. W. S.







W.H. Fitch. del. et lith.

Anthurium Fendleri, Schott.

J.N. Fitch imp.



TAB. 271.

Natural Order AROIDEÆ.

Genus ANTHURIUM, Schott.

- A. FENDLERI (Schott, *Prodr. Aroid.* p. 468). Caudice elongato assurgente, petiolis viridibus 9—10 poll. longis facie planis, geniculis modice elongatis facie leviter canaliculatis, foliis oblanceolato-oblongis 20—24 poll. longis medio 7—9 poll. latis acutis basi subcuneatis coriaceis supra saturate viridibus subtus flavescenti-viridibus, venis primariis 25—30 erecto-patentibus in pseudo-neruum continuum desinentibus, pedunculis viridibus petiolis subduplo longioribus, spathis lanceolatis viridibus $3\frac{1}{2}$ —4 poll. longis basi valde decurrentibus, spadicebus breviter pedicellatis purpureis spathis sesqui longioribus.

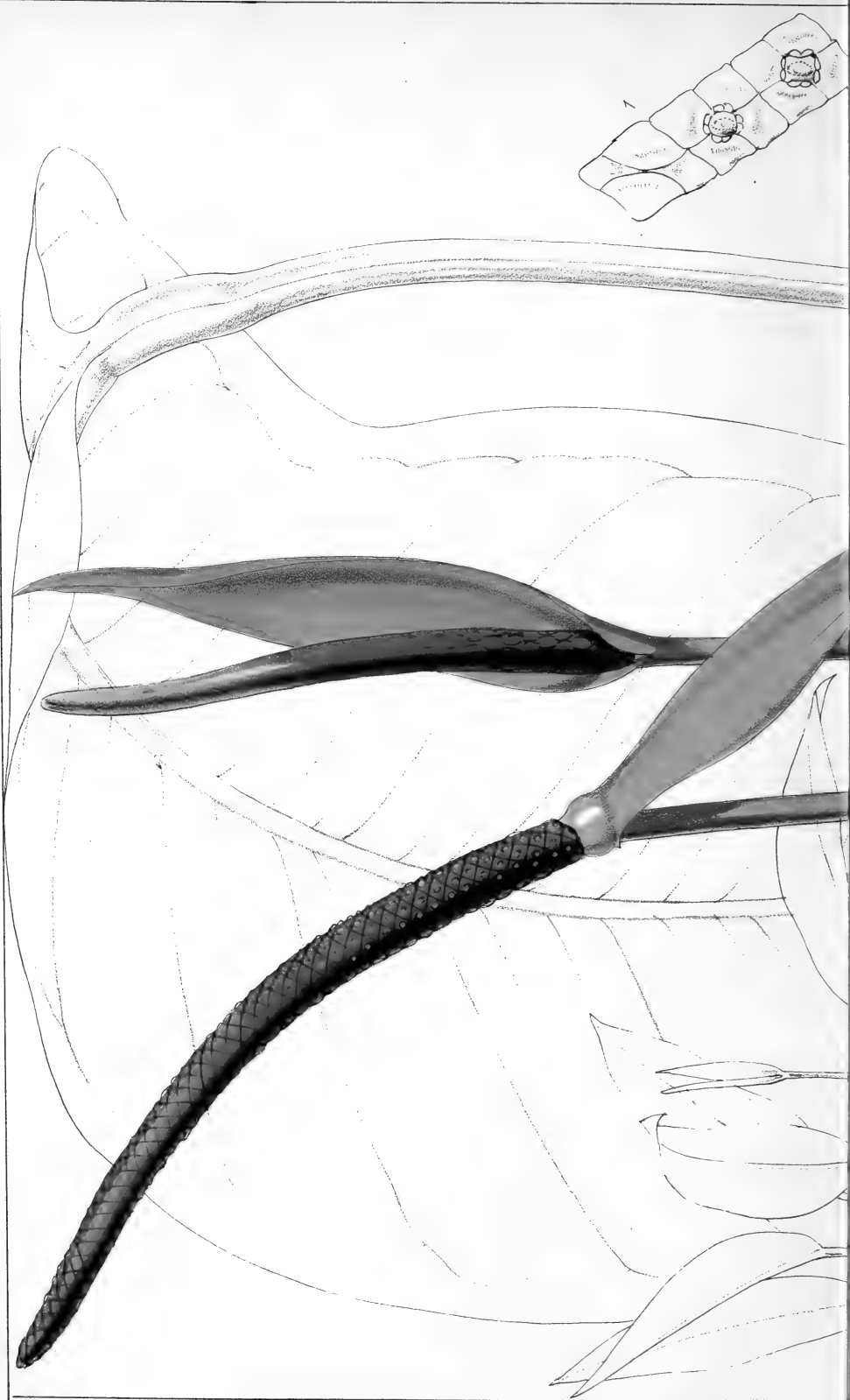
A native of Venezuela, discovered by the indefatigable collector after whom it is named.

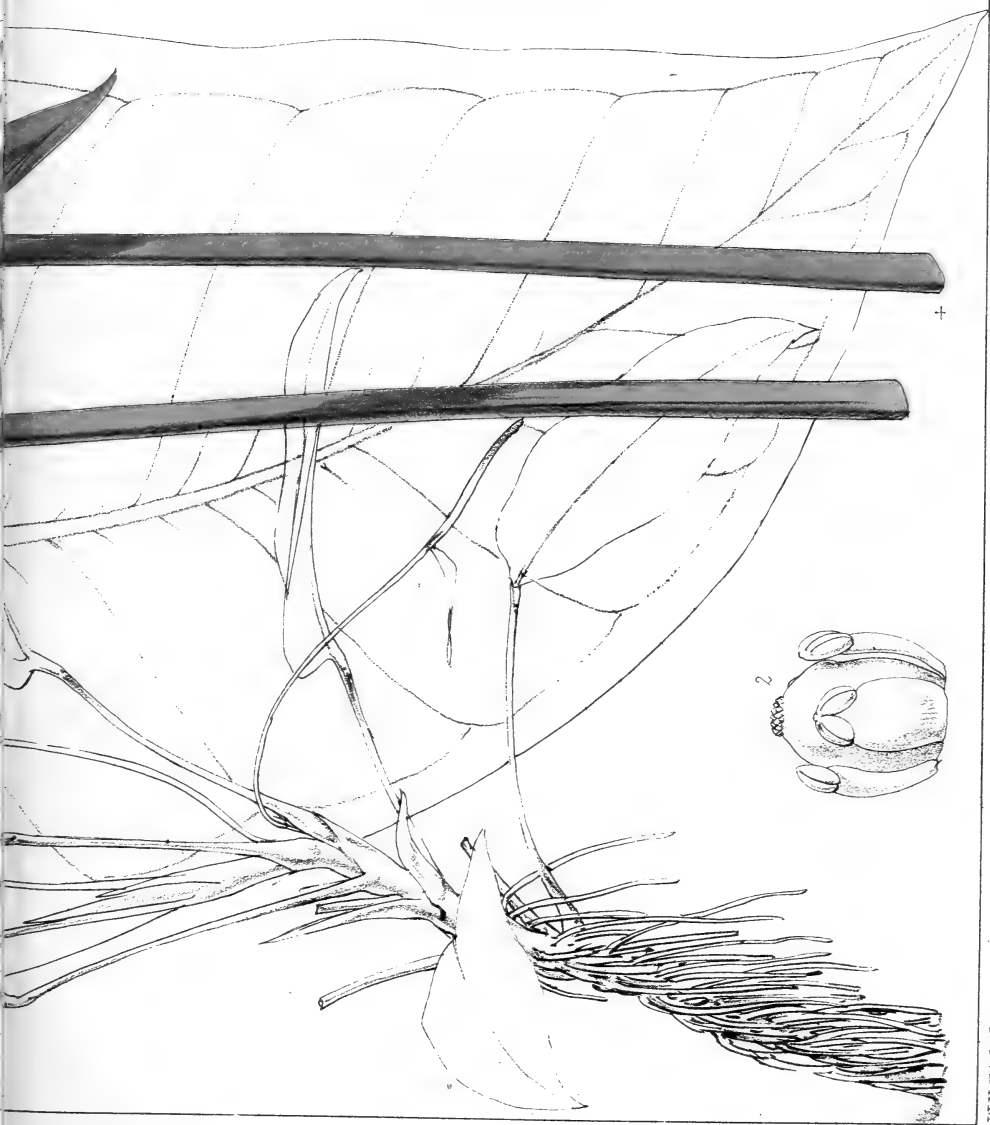
Caudex reaching a height of two to three feet. *Petioles* nine to ten inches long, much thickened at the base, flattened on the face, four lines thick. *Geniculum* six to nine lines long, slightly channelled down the face. *Leaves* oblanceolate-oblong, twenty to twenty-four inches long, seven to nine inches broad at the middle, acute, narrowed downwards to a subcuneate base, coriaceous, dark bright green above, paler and a rather yellowish green below; *midrib* narrowly winged on the upper surface in the lower part, on the under surface more acute upwards; *main veins* twenty-five to thirty, erecto-patent; *pseudo-nerve* continuous, distant four to six lines from the margin. *Peduncles* terete, green, twice as long as the petioles. *Spathe* lanceolate, acute, spreading, three and a half to four inches long, conspicuously decurrent at the base. *Spadix* shortly stalked, slender, purplish, six to seven inches long.

Well distinguished from most of the other species of the group *Pachyneurium* by its elongated caudex and distinct continuous pseudo-nerve.

TAB. 271.—1, pair of flowers viewed from above; 2, single flower viewed from the side; 3, ovary with stamens: all magnified.—J. G. B.

This fine species produces a tall stem well covered with roots, and having at the apex several ovate bright glossy green leaves. The plant is worthy a place in any general collection of stove plants. Obtained from Mons. Van Houtte, of Ghent.—W. W. S.





W.H. Fitch, del. et lith.

Anthurium Olfersianum, Kunth.

J.N. Fitch imp

W. P.
OF THE
UNIVERSITY OF MINNESOTA

TAB. 272.

Natural Order AROIDEÆ.

Genus ANTHURIUM, Schott.

- A. OLFERSIANUM (*Kunth, Enum. iii. 72*). Caudice assurgente valde elongato, petiolis 9—12 poll. longis facie planis, geniculis elongatis facie leviter canaliculatis, foliis ovato-lanceolatis 12—16 poll. longis medio 5—6 poll. latis acutis basi rotundatis coriaceis supra obscure viridibus subtus pallidioribus nitidioribus, venis primariis 15—20 gracilibus in pseudoneurum subcontinuum desinentibus, pedunculis gracilibus viridibus petiolis paulo excedentibus, spathis anguste lanceolatis viridibus 3—4 poll. longis demum reflexis, spadicebus subsessilibus saturate purpureis spathis paulo excedentibus. — *Schott, Prodr. Aroid. p. 483.*

A native of the neighbourhood of Rio Janeiro.

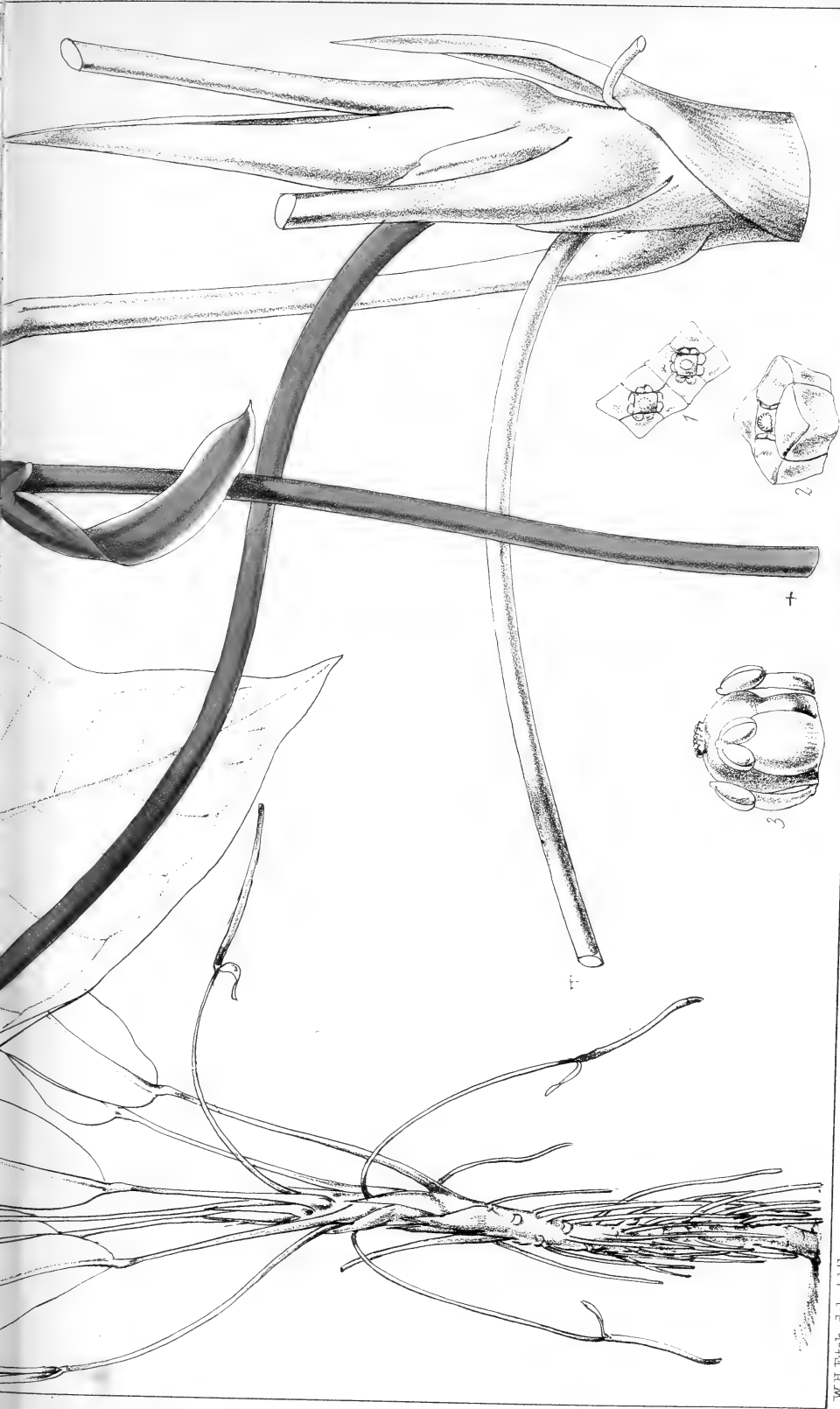
Caudex assurgent, much elongated, reaching four to six feet in our specimens. *Petioles* nine to twelve inches long, one-fourth of an inch thick, flat on the face with a cartilaginous border, rounded on the back. *Geniculum* an inch long, slightly channelled down the face. *Leaves* ovate-lanceolate, twelve to sixteen inches long, five to six inches broad at the middle, acute, rounded at the base, coriaceous, dull green above, paler and brighter below; *midrib* almost triquetrous; *main veins* fine, fifteen to twenty, forming an acute angle of sixty to seventy degrees with the midrib; *pseudo-nerve* distinct, distant three to four lines from the margin, continuous unless at the very base. *Peduncles* terete, green, a little exceeding the petioles. *Spathe* linear-lanceolate, green, three to four inches long, ultimately reflexed. *Spadix* subsessile, bright purple, slender, slightly exceeding the spathe.

TAB. 272.—1, three flowers viewed from above; 2, ovary with stamens: both magnified.—*J. G. B.*

A very free-flowering tall-growing species, with a bright purple spadix produced on long peduncles, which at first are erect, then pendent. The stem is thin and erect, furnished with roots at intervals. I received it from Mons. L. Van Houtte, of Ghent. — *W. W. S.*

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Anthurium lucidum, Huntb.

J.N. Fitch imp.

W.H. Fitch del. et lith.

TAB. 273.

Natural Order AROIDEÆ.

Genus ANTHURIUM, Schott.

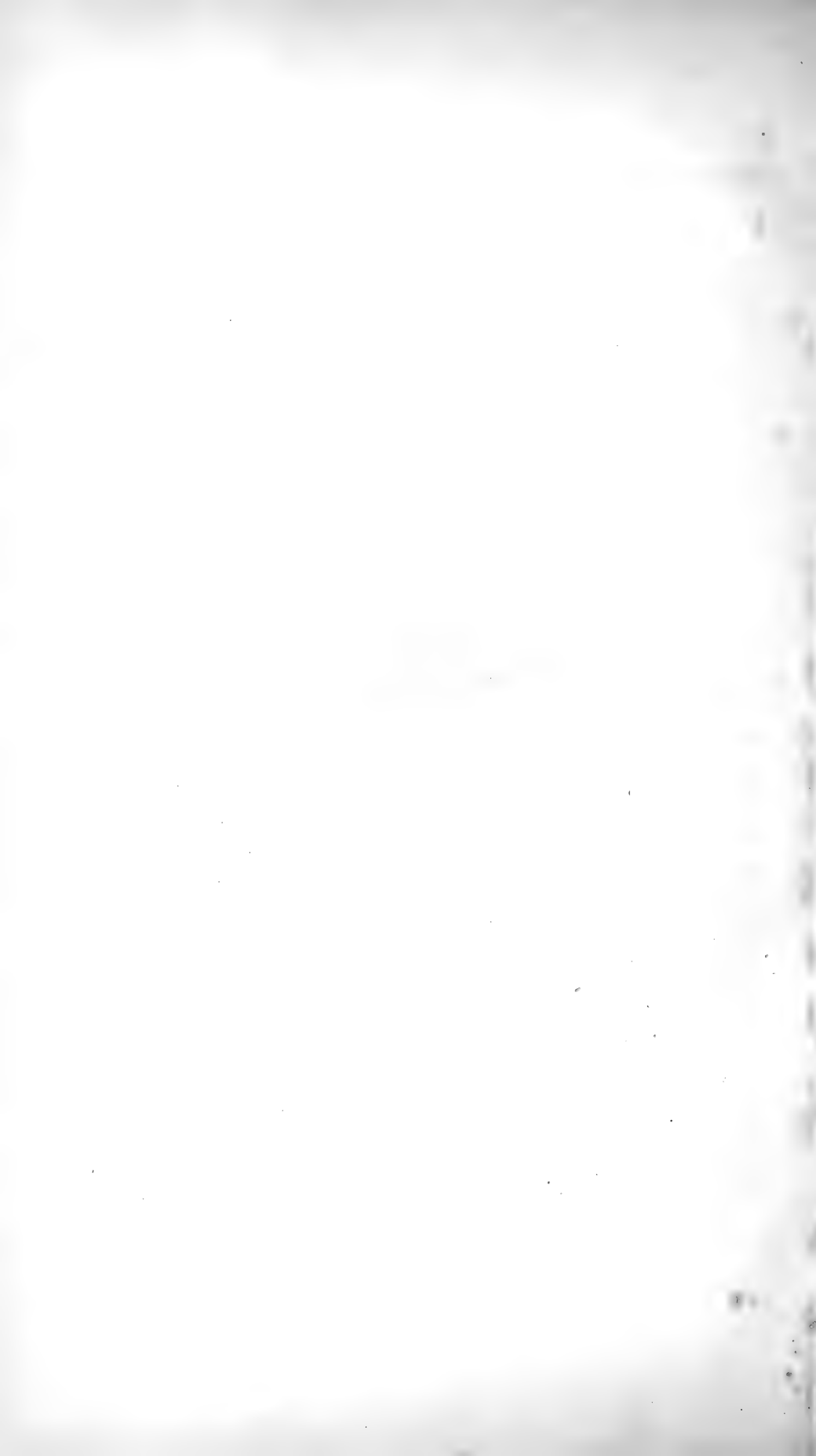
- A. LUCIDUM (Kunth, Enum. iii. p. 73). Caudice assurgente valde elongato, petiolis subteretibus 10—12 poll. longis, geniculis modice elongatis, foliis oblongis 10—12 poll. longis, medio 4—5 poll. latis acutis basi rotundatis rigide coriaceis utrinque lucidis supra saturate subtus pallide viridibus, venis primariis circiter 20 gracilibus subpatentibus extrorsum arcuatis in pseudoneurum continuum desinentibus, pedunculis nitide brunneis gracilibus petiolis paulo excedentibus, spathis anguste lanceolatis rubro-brunneis $2\frac{1}{2}$ —3 poll. longis demum reflexis, spadicebus breviter stipitatis saturate purpureis spathis subduplo longioribus.—Schott, Prodr. Aroid. p. 434. A. Luschnathianum, Kunth, Enum. iii. p. 73.

A native of the southern coast-provinces of Brazil.

Caudex much elongated, assurgent, reaching four to six feet in our specimen. *Petioles* ten to twelve inches long, slender, subterete. *Geniculum* six to nine lines long, not channelled down the face. *Leaves* oblong, ten to twelve inches long, four to five inches broad at the middle, acute, rounded at the base, very coriaceous, shining on both sides, dark green above, paler beneath; *main veins* about twenty, slender, immersed, subpatent, slightly arcuate; *pseudo-nerve* two to four lines within the margin, distinct, continuous. *Peduncles* bright pale brown, slender, terete, slightly exceeding the petioles. *Spathes* reddish brown, linear-lanceolate, two and a half to three inches long, ultimately reflexed. *Spadix* shortly stalked, bright purple, slender, four to six inches long.

TAB. 273. — 1, pair of flowers viewed from above; 2, single flower viewed from the side; 3, ovary with stamens: all magnified.—J. G. B.

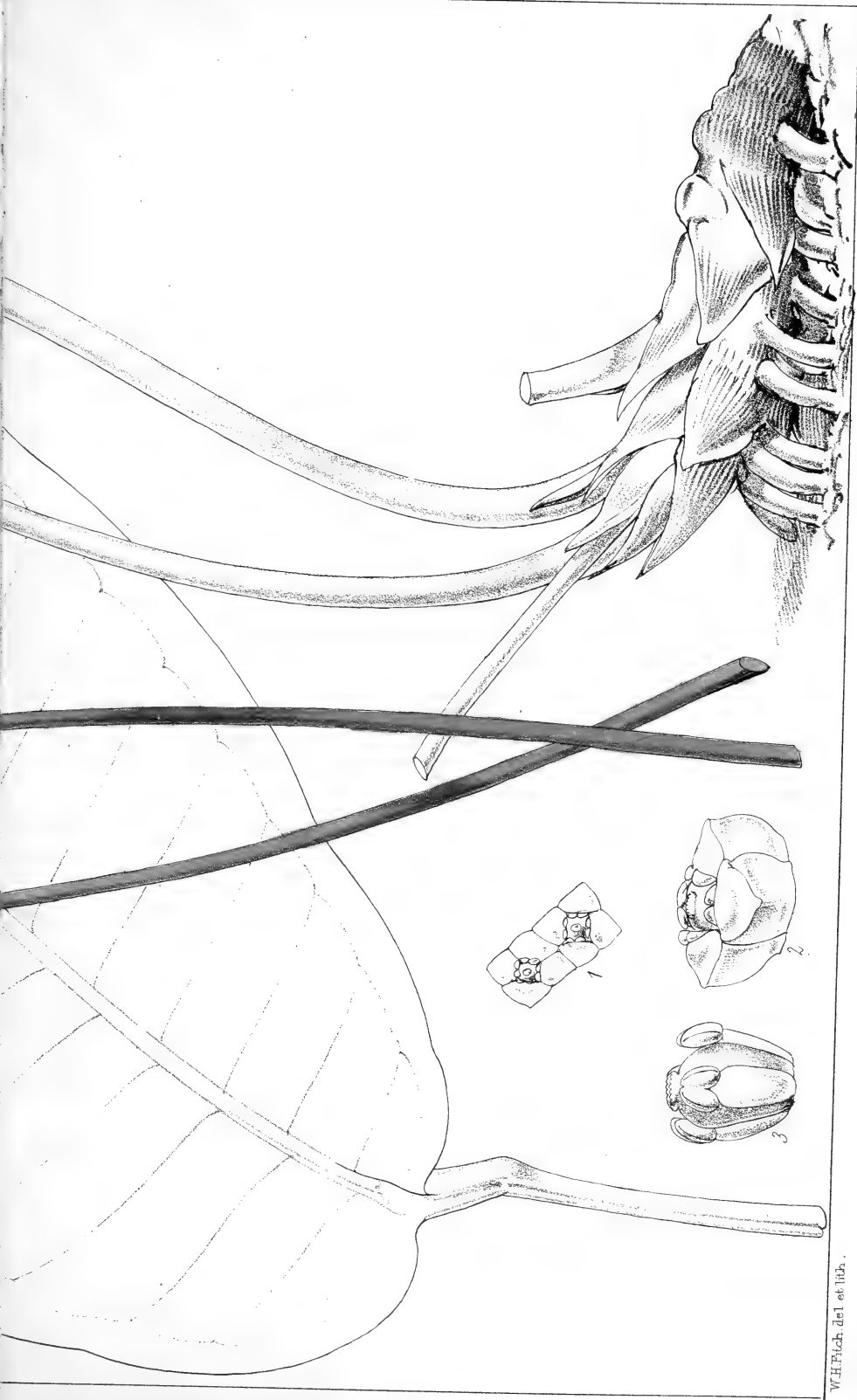
The young leaves of this plant are very glossy, and reflect light almost as if varnished. It is a tall-growing plant, flowering freely, and throwing out many roots from the stem. I have grown the species for some years, but I have now no account of its origin.—W. W. S.





Pl. 244.





Anthurium emarginatum, Baker.

J.N. Fitch imp.

W.H. Fitch del et lith.

TAB. 274.

Natural Order AROIDEÆ.

Genus ANTHURIUM, Schott.

- A. EMARGINATUM (*Baker*). Caudice brevi decumbente, petiolis 10—12 poll. longis facie planis. geniculis modice elongatis facie canaliculatis, foliis oblongis 9—12 poll. longis medio 4—6 poll. latis apice emarginatis minute apiculatis basi breviter cordatis coriaceis supra obscure viridibus subtus paullo pallidioribus, venis primariis 20—30 gracilibus immersis subpatentibus arcuatis in pseudoneurum subcontinuum desinentibus, pedunculis viridibus petiolis paullo brevioribus, spathis linearibus cuspidatis 12—15 lin. longis viridibus demum reflexis, spadicebus distincte stipitatis viridibus gracilibus 2—3 poll. longis.

A native of Tropical America ?

Caudex very short, decumbent. *Petioles* ten to twelve inches long, two to three lines thick, flattened down the face, rounded on the back, dull green. *Geniculum* half to five-eighths of an inch long, channelled down the face. *Leaves* oblong, nine to twelve inches long, four to six inches broad at the middle, emarginate at the apex, with a minute horny deciduous apiculus at the end of the midrib, cordate at the base, with lobes not more than three to four lines deep, coriaceous in texture, dull green above, paler beneath; *main veins* twenty to thirty, fine, immersed, spreading from the midrib at nearly a right angle, arcuate outwards; *pseudo-nerve* distinct, continuous or confluent with the edge at the base, distant from it three to four lines at the middle of the blade. *Peduncles* green, slightly shorter than the petioles. *Spathe* green, linear, cuspidate, twelve to fifteen lines long, ultimately reflexed. *Spadix* distinctly stalked, green, slender, two to three inches long.

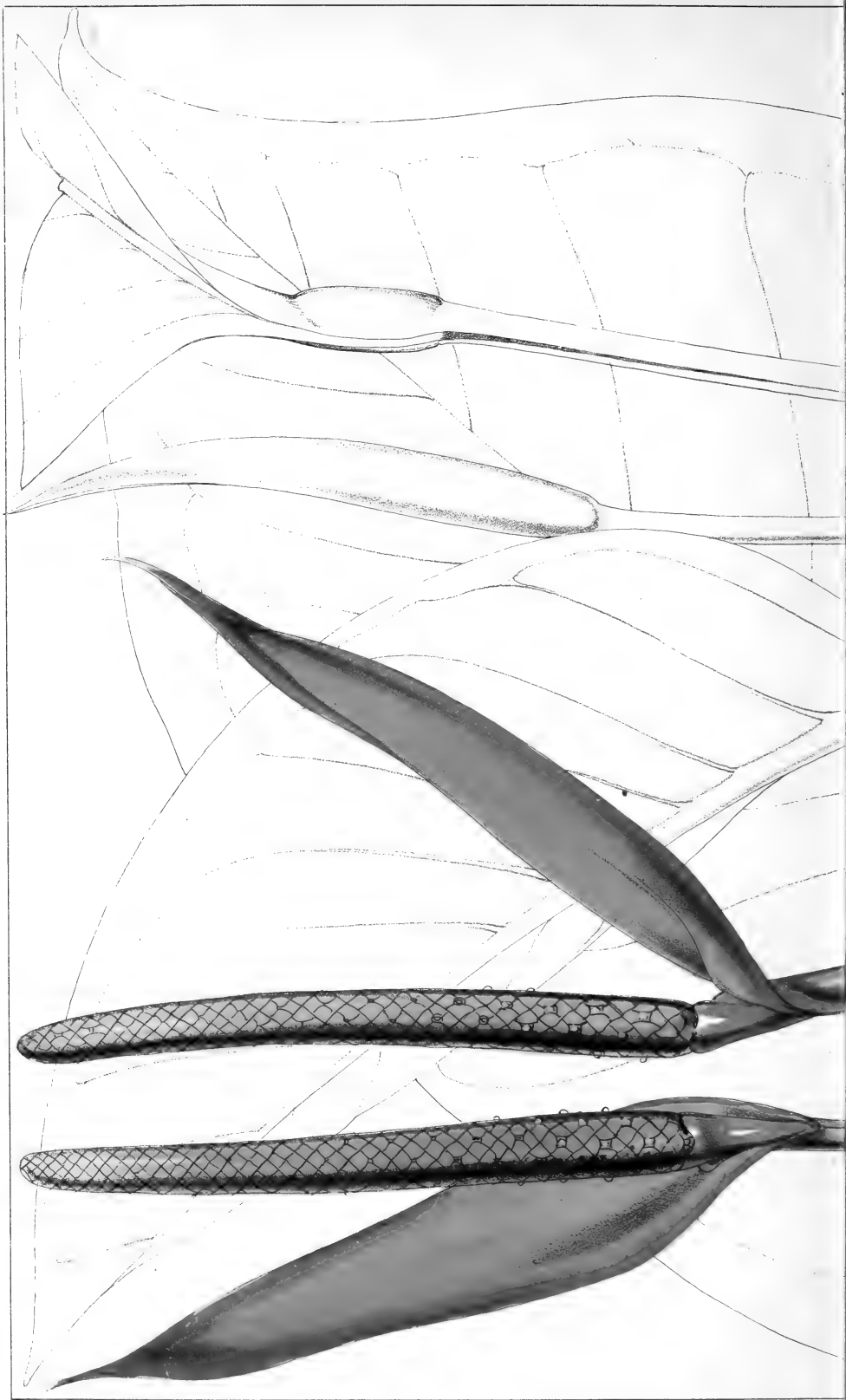
Of species with which we are acquainted, nearest to *A. lucidum*, which it resembles closely in the size, texture and venation of the leaf, differing from it materially in its shape, in the character of the caudex, and in the size and colour of the spathe and spadix.

TAB. 274. — 1, pair of flowers viewed from above; 2, single flower viewed from the side; 3, ovary with stamens: all magnified.—*J. G. B.*

The stem of this species is short and procumbent, producing a few ovate leaves on long petioles. I obtained the plant from a sale in London, without any locality being given.—*W. W. S.*

THE
GREAT
GREAT
GREAT







W.H. Fitch del et lith.

J.N. Fitch imp



TAB. 275.

Natural Order AROIDEÆ.

Genus ANTHURIUM, Schott.

A. BELLUM (Schott, *Æst. Bot. Zeitschr.* 1859, p. 100). Caudice decumbente elongato, petiolis 6—9 poll. longis dorso teretibus cum geniculis crassis elongatis facie sulcatis, foliis ovatis 9—12 poll. longis 6—8 poll. latis acutis deorsum ad basin cuneatum late rotundatis, valde coriaceis, supra nitide saturate viridibus subtus pallidioribus, venis primariis 12—15 erecto-patentibus extrorsum arcuatis, pseudoneuris irregularibus prope medium cum margine anastomosantibus, pedunculis purpureis petiolis subæquilongis, spathis lanceolatis viridibus purpureo marginatis 4—5 poll. longis basi decurrentibus, spadicebus brunneis distincte stipitatis spathis subæquilongis.—Schott, *Prodr. Aroid.* p. 484.

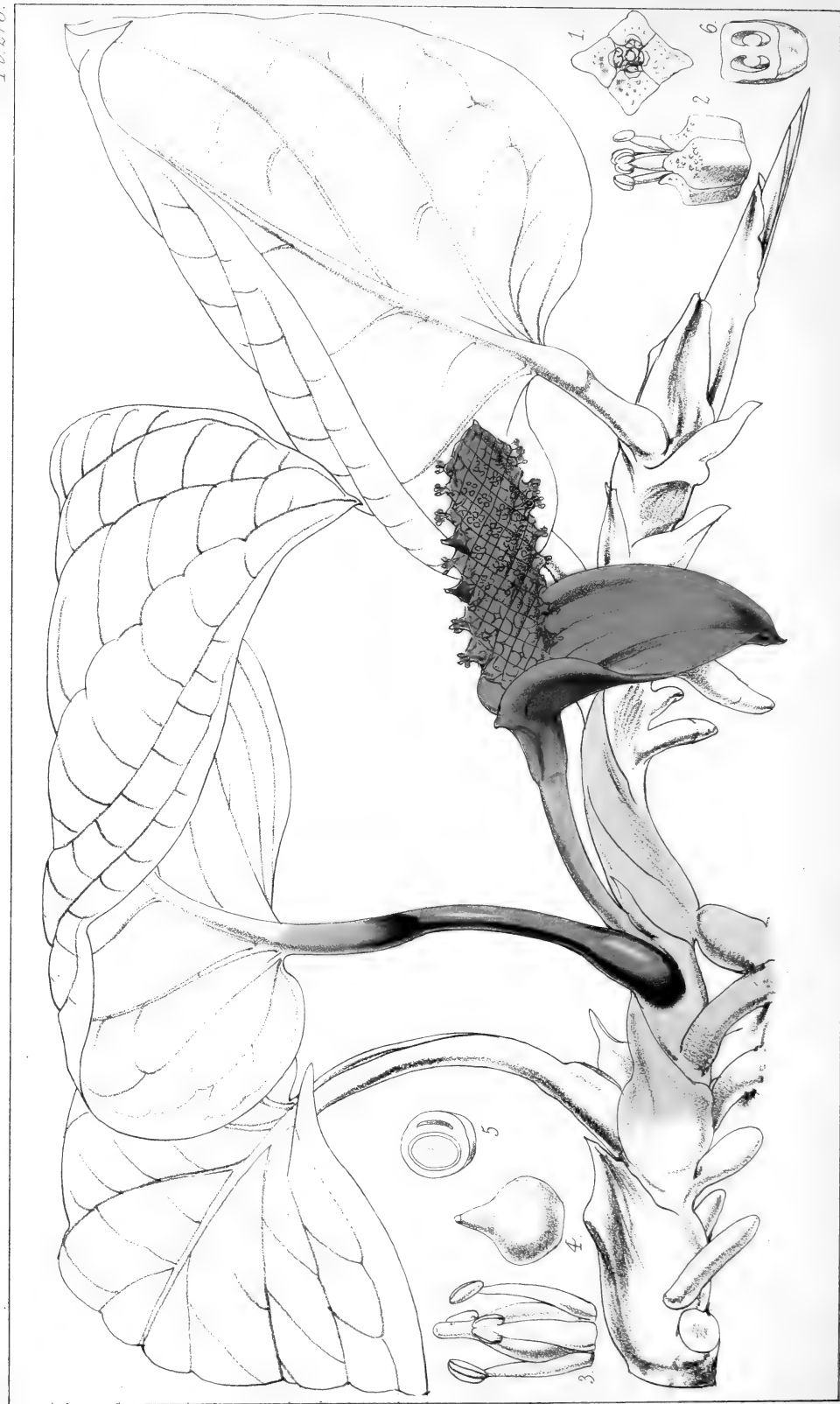
A native of Brazil.

Caudex decumbent, reaching a foot long. *Petioles*, in the specimen drawn, six to nine inches long, a quarter of an inch thick, green, rounded on the back, slightly channelled down the face. *Geniculum* pale green, half an inch thick. *Leaves* ovate, nine to twelve inches long, six to eight inches broad below the middle, acute, broadly rounded to a narrow cuneate base, very coriaceous in texture, bright dark green above, paler beneath; *main veins* twelve to fifteen, erecto-patent, arcuate in the outer half; *pseudo-nerves* very irregular, usually confluent with the edge half-way down. *Peduncles* purplish, about as long as the petioles. *Spathe* lanceolate, acuminate, green edged with purple, four to five inches long, distinctly decurrent at the base. *Spadix* distinctly stalked, brownish, about as long as the spathe.

TAB. 275.—1, pair of flowers viewed from above; 2, single flower viewed from the side; 3, ovary with stamens: all magnified.—J. G. B.

The stem of this plant creeps on the surface of the ground, and throws up some finely-shaped rich green leaves. It is a compact-growing plant, and very effective in a proper situation. I am indebted to Mr. Edwin Reed for this interesting species, obtained in the province of Bahia, Brazil.—W. W. S.

OF THE
UNIVERSITY OF DETROIT



TAB. 276.

Natural Order AROIDEÆ.

Genus ANTHURIUM, Schott.

- A. RADICANS (*C. Koch in Schott Prodr. Aroid. p. 556*). Caudice elongato decumbente, petiolis purpureis teretibus $1\frac{1}{2}$ —2 poll. longis, geniculis longis, foliis horizontalibus cordato-ovatis 6—7 poll. longis acutis subcoriaceis supra bullatis saturate viridibus subtus pallidis, venis primariis 3—4 valde ascendentibus, pseudoneuris subnullis, pedunculis petiolis æquilongis, spathis crassis patentibus rubellis cordato-oblongis 18—21 lin. longis, spadicebus stipitatis crassis rubello-viridibus spathis æquilongis, ovariis in stylos distinctos angustatis.

A native of Tropical America?

Caudex elongated, decumbent. *Petioles* ascending, purplish, terete, an inch and a half to two inches long. *Geniculum* slender, nearly an inch long. *Leaves* horizontal, cordate-ovate, six to seven inches long, two and a half to three inches broad, acute, subcoriaceous, bullate between the principal veins, dark green above, much paler below; *main veins* three to four, very much ascending, the uppermost starting from the midrib at the middle and reaching the point of the leaf; *pseudo-nerve* none. *Peduncles* pale reddish, about as long as the petioles. *Spathe* fleshy, ovate, concave, patent, eighteen to twenty-one lines long, pale reddish. *Spadix* distinctly stalked, as long as the spathe, half an inch thick, reddish green. *Ovary* flask-shaped, narrowed into a distinct style.

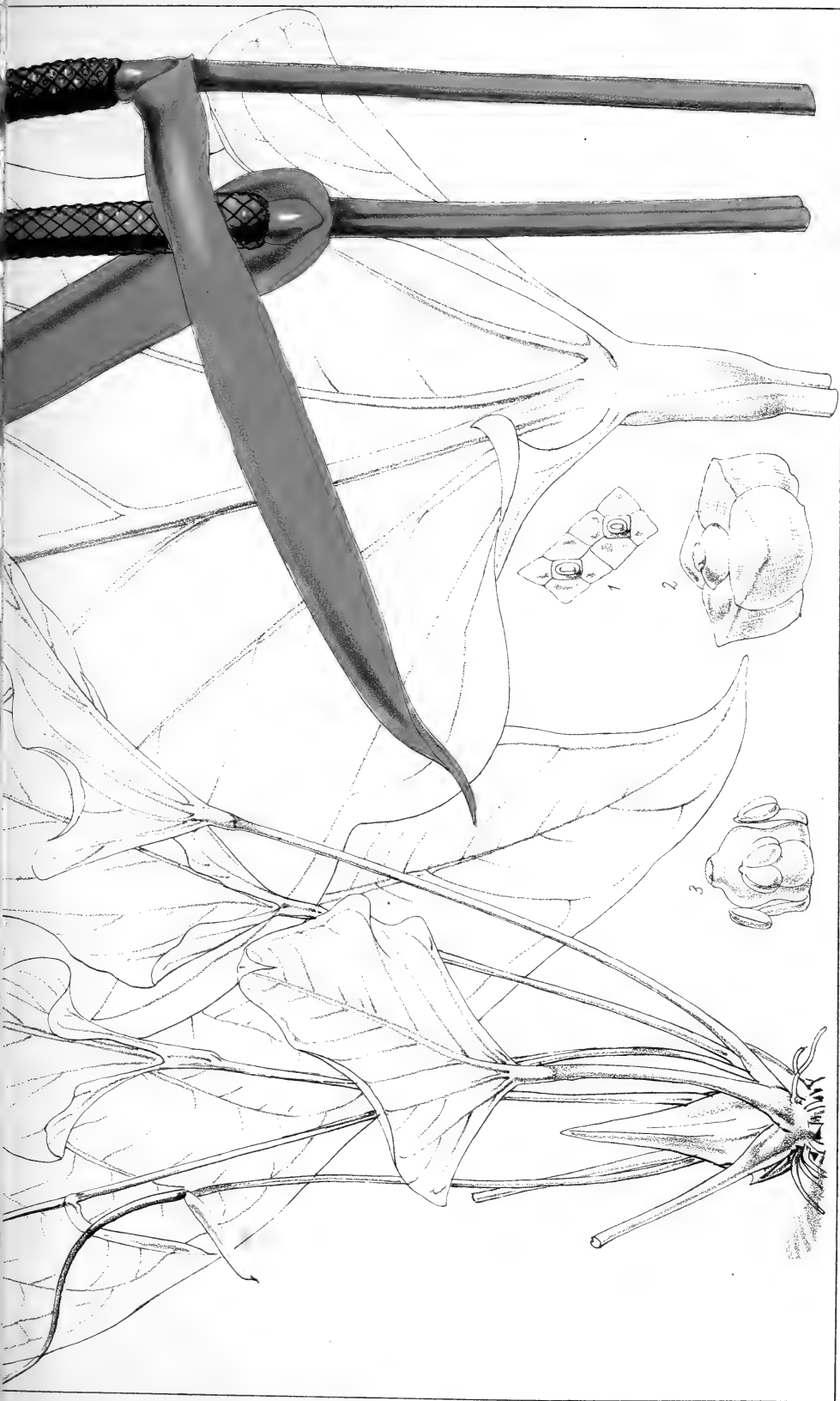
An exceedingly well-marked species, differing in the shape of the ovary from any other with which we are acquainted.

TAB. 276. — 1, flower viewed from above; 2, flower viewed laterally; 3, ovary and stamens; 4, ovary alone; 5, horizontal section of berry; 6, vertical section of ovary; all magnified.—*J. G. B.*

Another species with the stem procumbent or pendent, according to position of the plant. The leaves, which are produced close to each other, are ovate-cordate, wrinkled above, and very peculiar in appearance for an *Anthurium*, of which genus *radicans* is a very remarkable species. The plant was sent to me from Ghent by Mons. L. Van Houtte.—*W. W. S.*

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Anthurium macrophyllum, Schott.



TAB. 277.

Natural Order AROIDEÆ.

Genus ANTHURIUM, Schott.

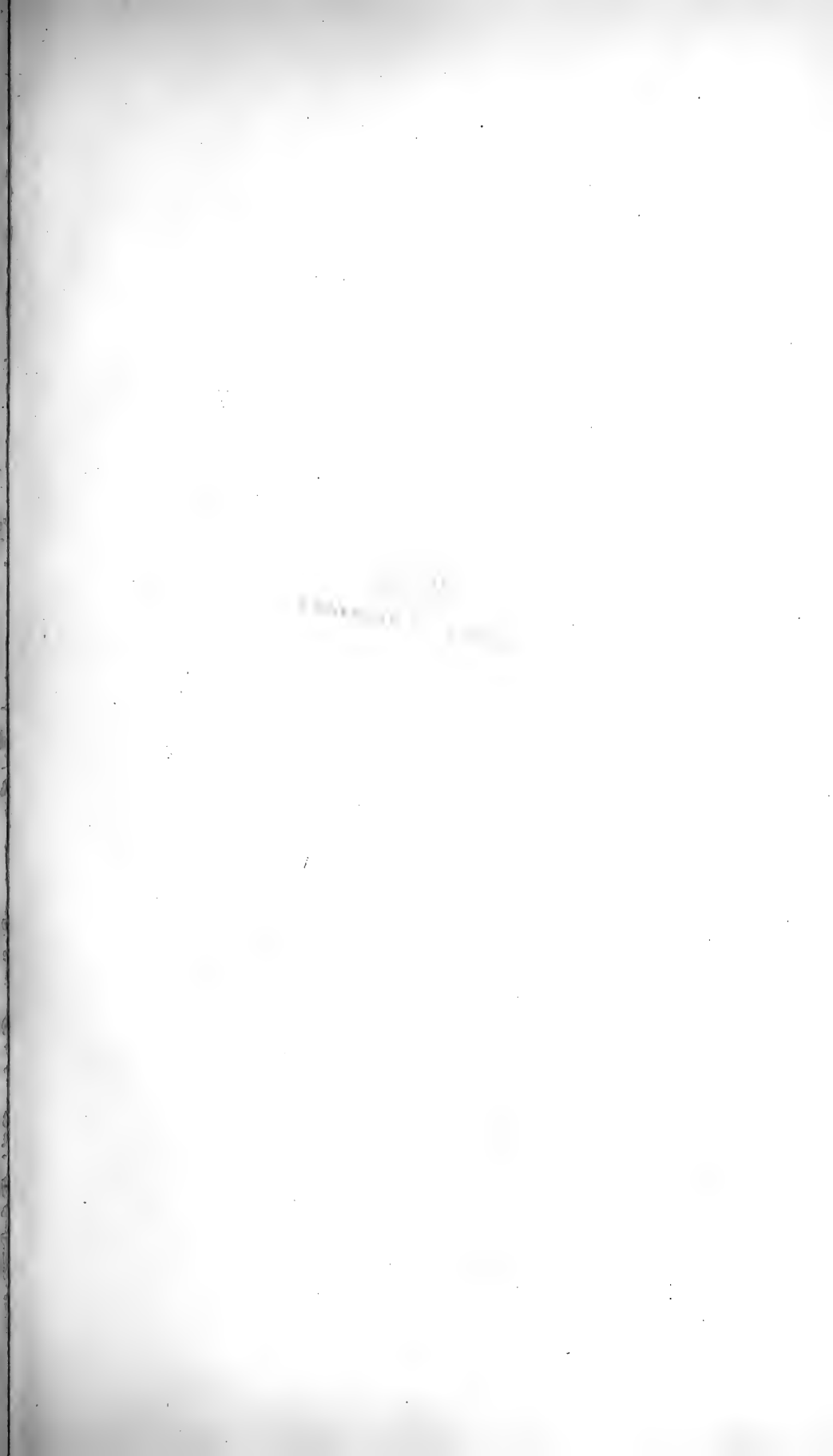
- A. MACROPHYLLUM (Schott, *Prodr. Aroid.* p. 516, non Endlich, nec Kunth). Acaulis, petiolis bipedalibus viridibus facie canaliculatis, geniculis elongatis, foliis cordato-panduriformibus 20—24 poll. longis 6—7 poll. latis acutis lobis basalibus brevibus incurvatis coriaceis supra saturate viridibus, venis primariis pedatis, 7—9 costalibus ascendentibus, 2—3 ex margine basali exortis, pseudo-neris supra medium laminæ cum margine anastomosantibus, pedunculis viridibus petiolis paulo excedentibus, spathis viridibus lineari-lanceolatis $4\frac{1}{2}$ —5 poll. longis demum reflexis, spadicebus livide purpureis breviter stipitatis subpedalibus.

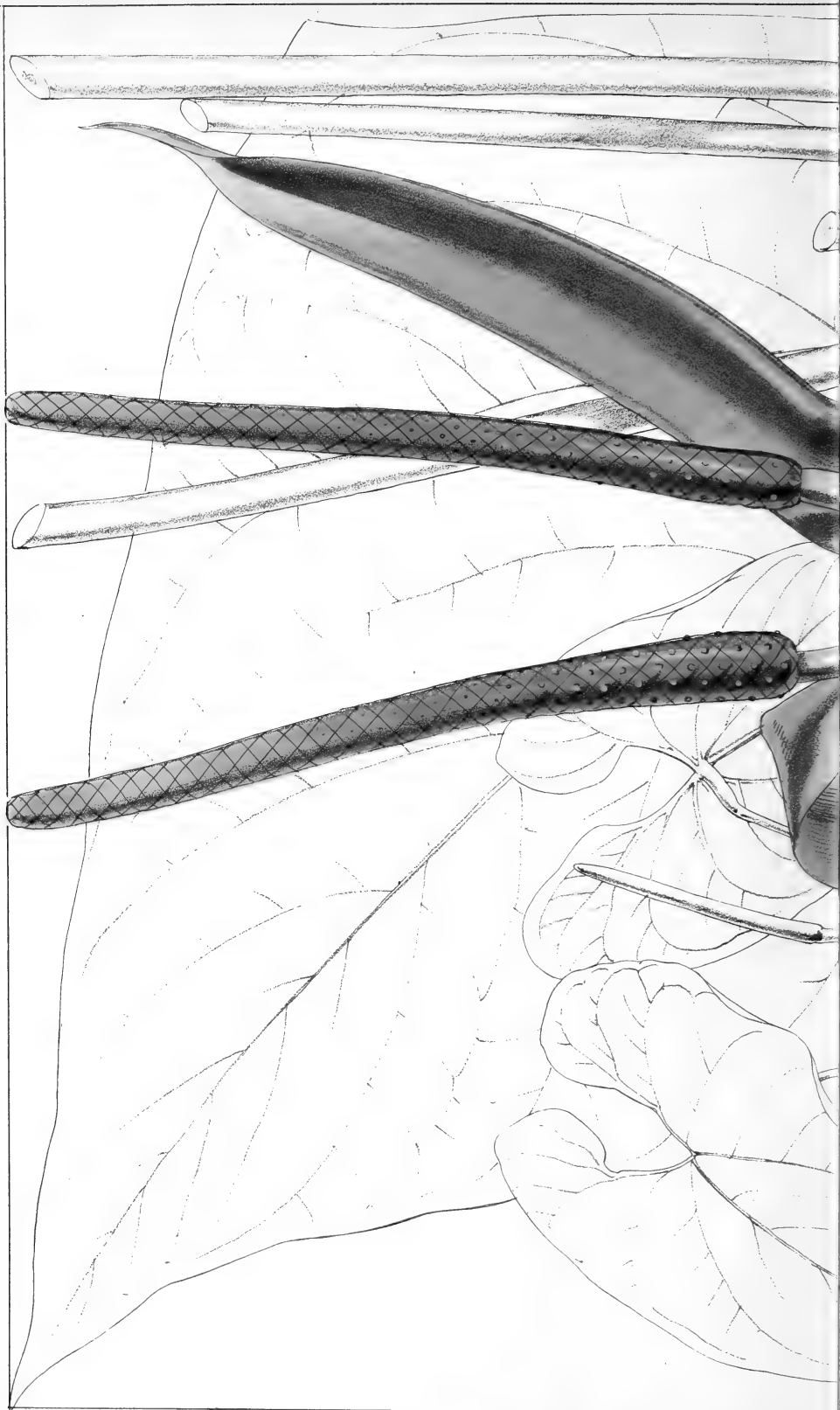
A native of the West Indies.

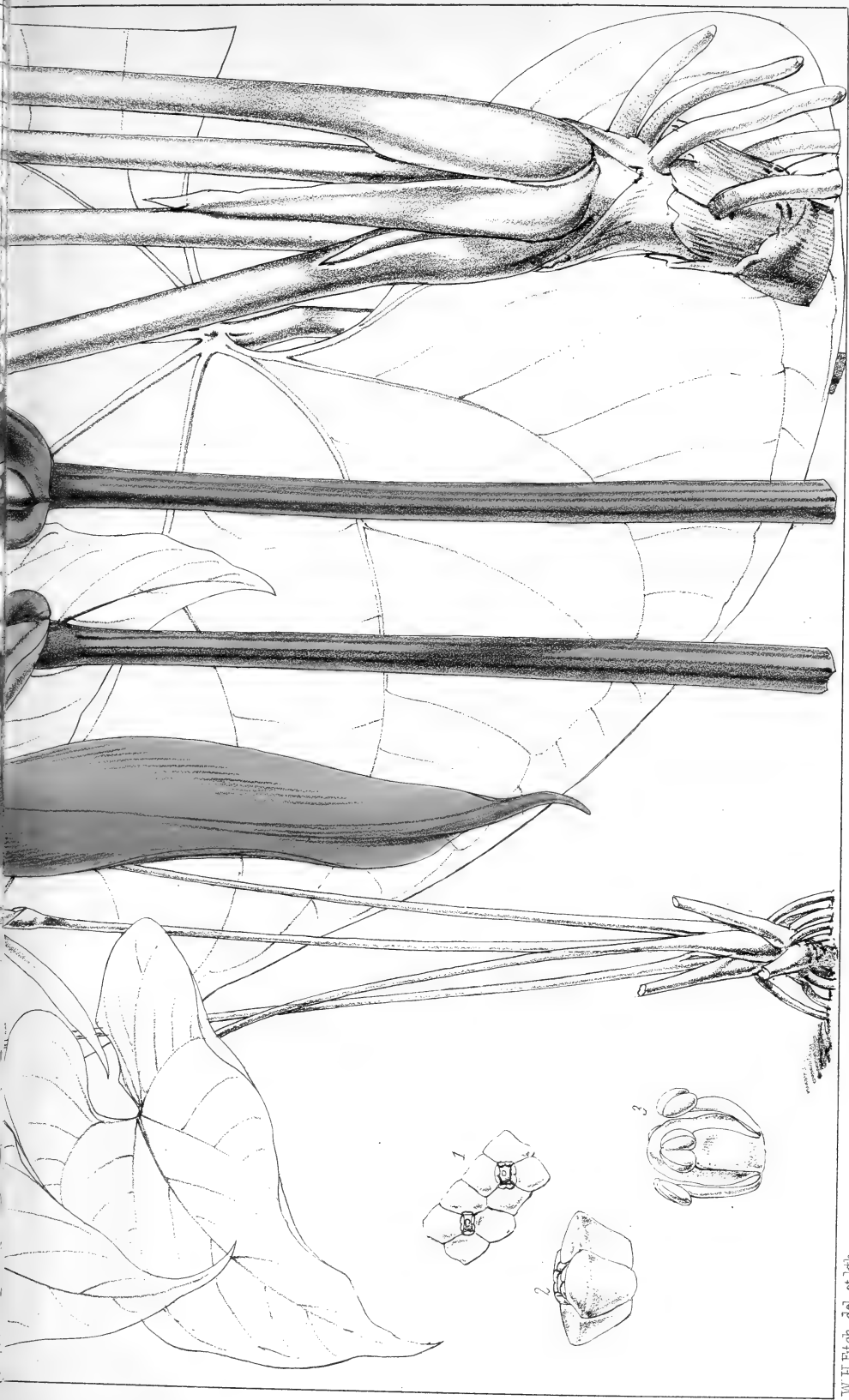
Acaulescent. *Petioles* bright green, twenty to twenty-four inches long, rounded on the back, channelled down the face, three-eighths of an inch thick. *Geniculum* an inch long. *Leaves* cordato-panduriform, twenty to twenty-four inches long, six to seven inches broad below the middle, acute, the basal lobes much incurved in the living plant, not more than an inch deep; texture very coriaceous; upper surface bright dark green, lower paler; *main veins* pedately arranged, seven to nine arising from the midrib and ascending, two to three from the basal edge of the blade; *pseudo-nerve* irregular, confluent with the edge above the middle of the leaf. *Peduncles* green, terete, slightly exceeding the petioles. *Spathe* green, linear-lanceolate, four and a half to five inches long, finally reflexed. *Spadix* shortly stalked, lurid glaucous-purple, twelve to fourteen inches long, tapering gradually upwards.

TAB. 277. — 1, pair of flowers viewed from above; 2, single flower viewed from the side; 3, ovary with stamens: all magnified.—J. G. B.

A stemless species, with large bright green leaves, which are remarkable for the basal lobes being considerably curved inwards. The spadix is long and of a peculiar dark purplish brown colour. M. Linden, of Brussels, furnished me with this fine and effective plant.—W. W. S.







W.H. Fitch. del. et. lith.

Anthurium æranthe, Hort.

J. N. Fitch. imp.



TAB. 278.

Natural Order AROIDEÆ.

Genus ANTHURIUM, Schott.

- A. *ÆRANTHE* (Hort). Caudice brevi assurgente, petiolis 2—2½ pedali-
bus purpureo-viridibus facie planis, geniculis brevibus, foliis cordato-
ovatis acutis 20—24 poll. longis 10—12 poll. latis lobis basalibus
profundis late rotundatis contiguis papyraceo-coriaceis supra saturate
viridibus leviter bullatis supra pallidioribus, venis primariis pedatis,
circa 6 costalibus ascendentibus, 3—4 ex margine basali egre-
dientibus, pseudo-neuris supra medium laminæ cum margine
anastomosantibus, pedunculis viridibus petiolis subæquantibus,
spathis viridibus lanceolatis cuspidatis 4—5 poll. longis, spadicebus
viridibus distincte stipitatis spathis paulo longioribus.

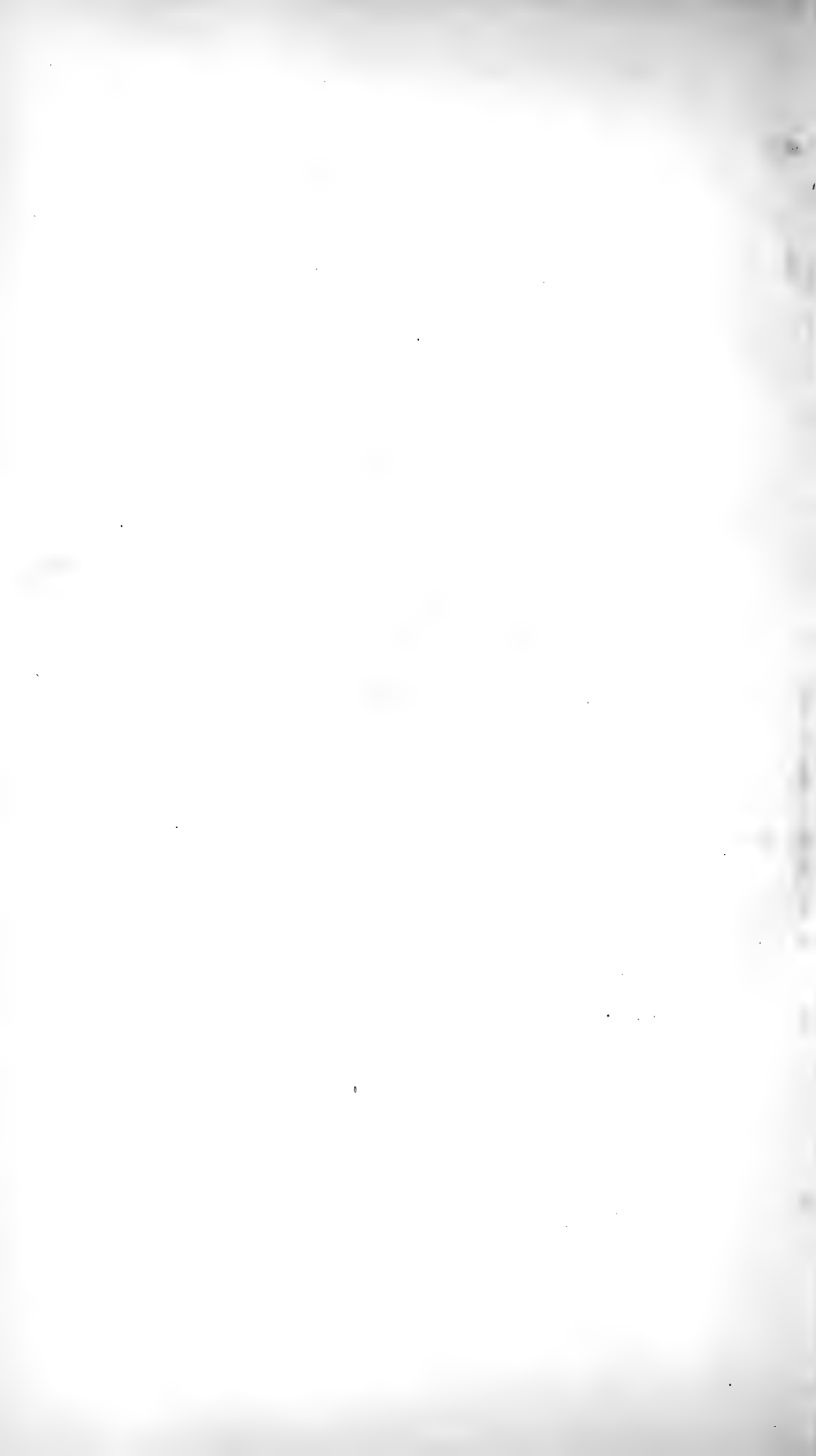
A native of Tropical America?

Caudex assurgent, reaching half a foot long in the specimen drawn. *Petioles* two to two and a half feet long, dull reddish green, flat on the face, terete on the back with four raised ribs on each side. *Geniculum* six to eight lines long, flat on the face. *Leaves* cordate-ovate, reaching twenty to twenty-four inches long, ten to twelve inches broad; the broadly-rounded basal lobes eight to nine inches deep, contiguous downwards, an inch and a half to two inches apart at the top of the petiole; texture papyraceo-coriaceous; upper surface dark green, slightly bullate, lower paler; *main veins* pedate, about six ascending from the costa, three to four arising from the basal margin; *pseudo-nerve* irregular, confluent with the edge above the middle of the blade. *Peduncles* green, terete, about as long as the petioles. *Spathe* lanceolate-cuspidate, green, erecto-patent, four to five inches long. *Spadix* green, slender, rather longer than the spathe, mounted on a pedicel six to eight lines long.

Of the species described in Schott's 'Prodromus,' this seems to come nearest to *A. violascens* (p. 521), from which it differs materially in the leaf, spathe and spadix.

TAB. 278. — 1, pair of flowers viewed from above; 2, single flower viewed from the side; 3, ovary with stamens: all magnified.—J. G. B.

An undescribed species, the origin of which is unknown to me. I have grown it some time under the name now given, and it is a species well worthy of cultivation. The leaves are few, large, thin, somewhat wrinkled above, and of a good green colour.—W. W. S.



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Anthurium cordifolium, Kunth.

J. N. Fitch imp

W.H. Fitch del et lith.

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TAB. 279.

Natural Order AROIDEÆ.

Genus ANTHURIUM, Schott.

- A. CORDIFOLIUM (*Kunth, Enum. iii. 76*). Caudice brevi, petiolis bipedalibus vel ultra longis subviridibus facie sulcatis, geniculis elongatis, foliis cordato-ovatis 16—20 poll. longis 10—12 poll. latis lobis basalibus brevibus sinu aperte deltoideo, valde coriaceis, supra nitide saturate viridibus, venis primariis pedatis, circiter 10—12 costalibus ascendentibus, 2 ex margine basali egredientibus, pseudoneuris brevibus irregularibus, pedunculis viridibus petiolis subæquilongis, spathis viridibus 7—8 poll. longis demum reflexis, spadicebus brunneo-viridibus vix stipitatis spathis paulo excedentibus. — *Schott, Prodr. Aroid. p. 515*; *Griseb. Fl. Brit. West. Ind. p. 509*.

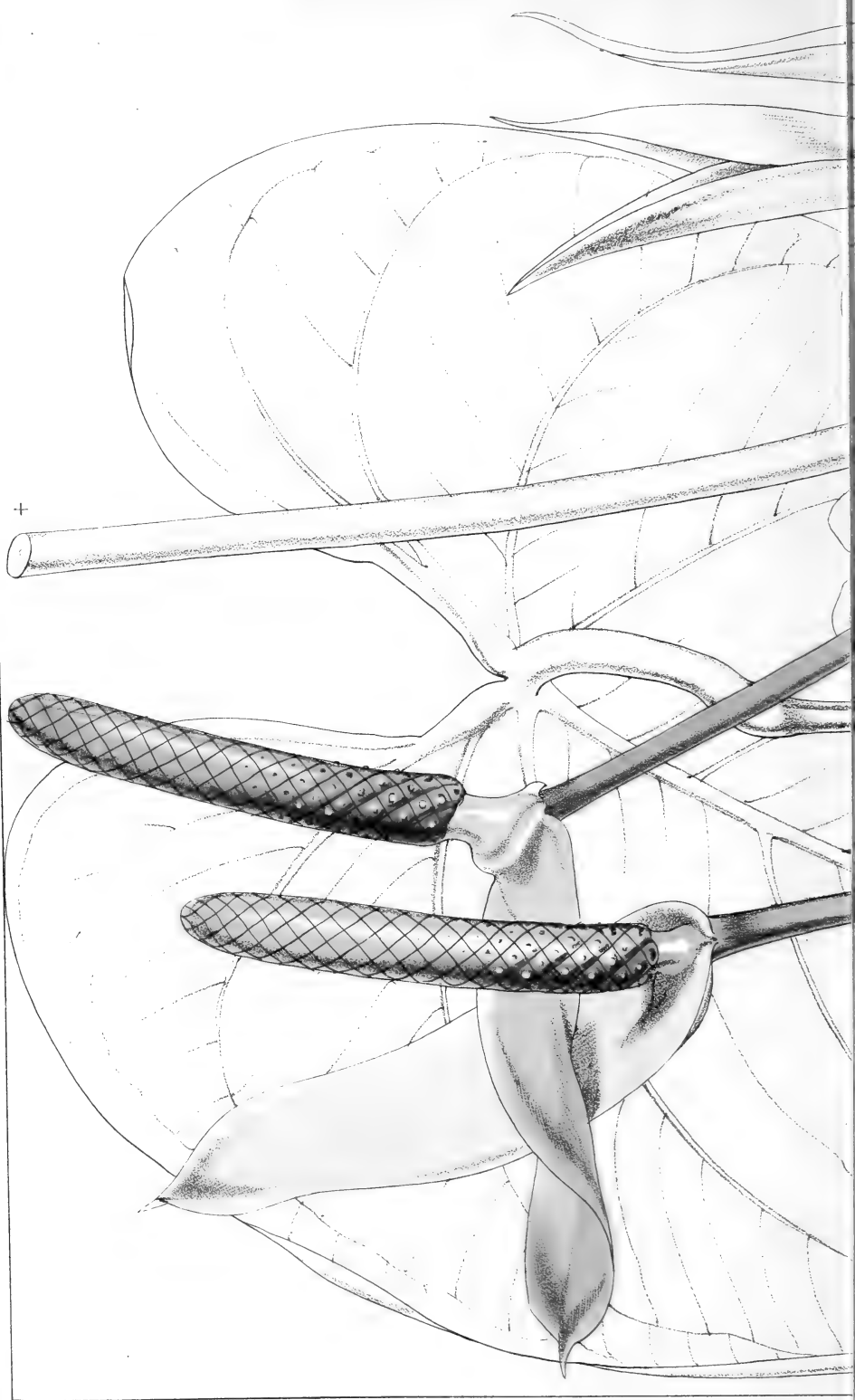
A native of the West Indies.

Caudex none or very short. *Petioles* two feet or more long, green slightly mottled with gray, channelled down the face, rounded on the back. *Geniculum* nine to twelve lines long, sulcate down the face. *Leaves* cordate-ovate, sixteen to twenty inches long, ten to twelve inches broad; the basal lobes very short, with a broad deltoid sinus between them; texture very coriaceous; upper surface bright dark green, lower paler; *main veins* arranged pedately, ten to twelve ascending from the midrib, and not more than two springing from the basal border; *pseudonerves* continuous only along the end of the three or four upper veins. *Peduncles* green, about as long as the petioles. *Spathe* green, seven to eight inches long, acuminate, finally deflexed. *Spadix* brownish green, scarcely stipitate, a little longer than the spathe.

TAB. 279. — 1, pair of flowers viewed from above; 2, single flower viewed from the side; 3, ovary with stamens: all magnified.—*J. G. B.*

This is a handsome species, which I obtained from Jamaica. Its leaves are thick, dark green and rigid. The spadix is long and green, upon an erect peduncle.—*W. W. S.*







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TAB. 280.

Natural Order AROIDEÆ.

Genus ANTHURIUM, Schott.

- A. MARGARITACEUM (*Baker*). Caudice assurgente modice elongato, petiolis teretibus pallide viridibus 18—21 poll. longis, foliis subcoriaceis cordato-ovatis acutis 10—12 poll. longis 6—8 poll. latis lobis basalibus rotundatis $2\frac{1}{2}$ —3 poll. profundis sinu modice aperto, supra nitide viridibus subtus multo pallidioribus, venis primariis pedatis 5—6 costalibus ascendentibus, 3—4 ex margine basali egredientibus, pseudoneuris supra medium laminæ cum margine anastomosantibus, pedunculis pallide viridibus 6—8 poll. longis, spathis margaritaceis lanceolatis cuspidatis 3— $3\frac{1}{2}$ poll. longis, spadicibus breviter stipitatis saturate purpureo-rubris spathis paulo brevioribus.

A native of Tropical America ?

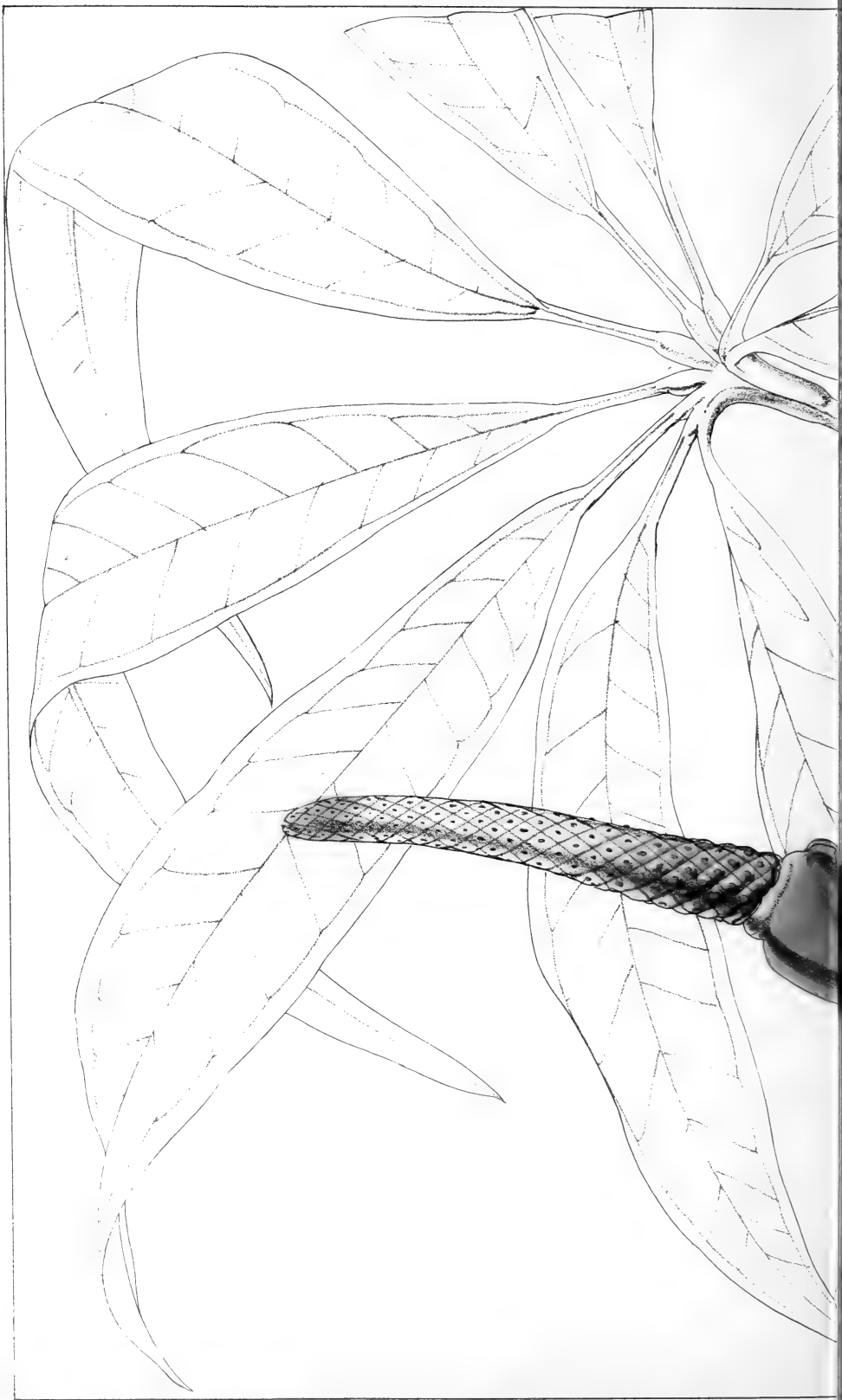
Caudex assurgent, reaching a foot long in the specimen drawn. *Petioles* terete, pale green, eighteen to twenty-one inches long, two to two and a half lines thick. *Geniculum* an inch long, a quarter of an inch thick. *Leaves* subcoriaceous, cordate-ovate, ten to twelve inches long, six to eight inches broad at the top of the petiole, acute; the rounded basal lobes two and a half to three inches deep, with a sinus an inch broad between them; upper surface bright deep green, the lower much paler; *main veins* arranged pedately, five to six ascending from the midrib, three to four springing from the lower border; *pseudo-nerve* irregular, confluent with the edge above the middle of the blade. *Peduncles* six to eight inches long, pale green. *Spathe* pearl-white, lanceolate-cuspidate, three to three and a half inches long, ultimately patent. *Spadix* shortly stalked, bright purplish red, rather shorter than the spathe.

Received from Linden, under the name of *Anthurium Lindenii*; but there is already an entirely different species named *A. Lindenianum* by Karl Koch. This one closely resembles *A. ornatum*, Bot. Mag. t. 5848, in general appearance and the colour of the spathe and spadix, but the plan of the veining and shape of the leaf are quite different.

TAB. 280. — 1, pair of flowers viewed from above; 2, single flower viewed from the side; 3, ovary with stamens: all magnified.—J. G. B.

I obtained this pretty species from M. Linden, of Brussels, It has a moderately tall stem, surmounted with heart-shaped, glossy, green leaves. It flowers freely, with a pale flesh-coloured spadix and yellow-green spathe.—*W. W. S.*







Anthurium variabile, Kunth.

TAB. 281.

Natural Order AROIDEÆ.
Genus ANTHURIUM, Schott.

A. VARIABLE (*Kunth, Enum. iii. p. 80*). Caudice elongato assurgente, petiolis viridibus teretibus 15—18 poll. longis, geniculis brevibus, foliis digitatim multifoliolatis subcoriaceis supra nitide saturate viridibus, foliolis petiolulatis (petiolulis pollicaribus) lanceolatis 10—12 poll. longis medio 15—18 lin. latis acutis basi cuneatis, venis primariis 10—12 immersis gracilibus erecto-patentibus, pseudo-neuris gracilibus continuis, pedunculis crassis viridibus 2—3 poll. longis, spathis lanceolatis acutis viridibus 3 poll. longis demum reflexis, spadicebus sessilibus livide violaceo-purpureis spathis æquilongis.—*Schott, Prodr. Aroid. p. 553.*

A native of Brazil.

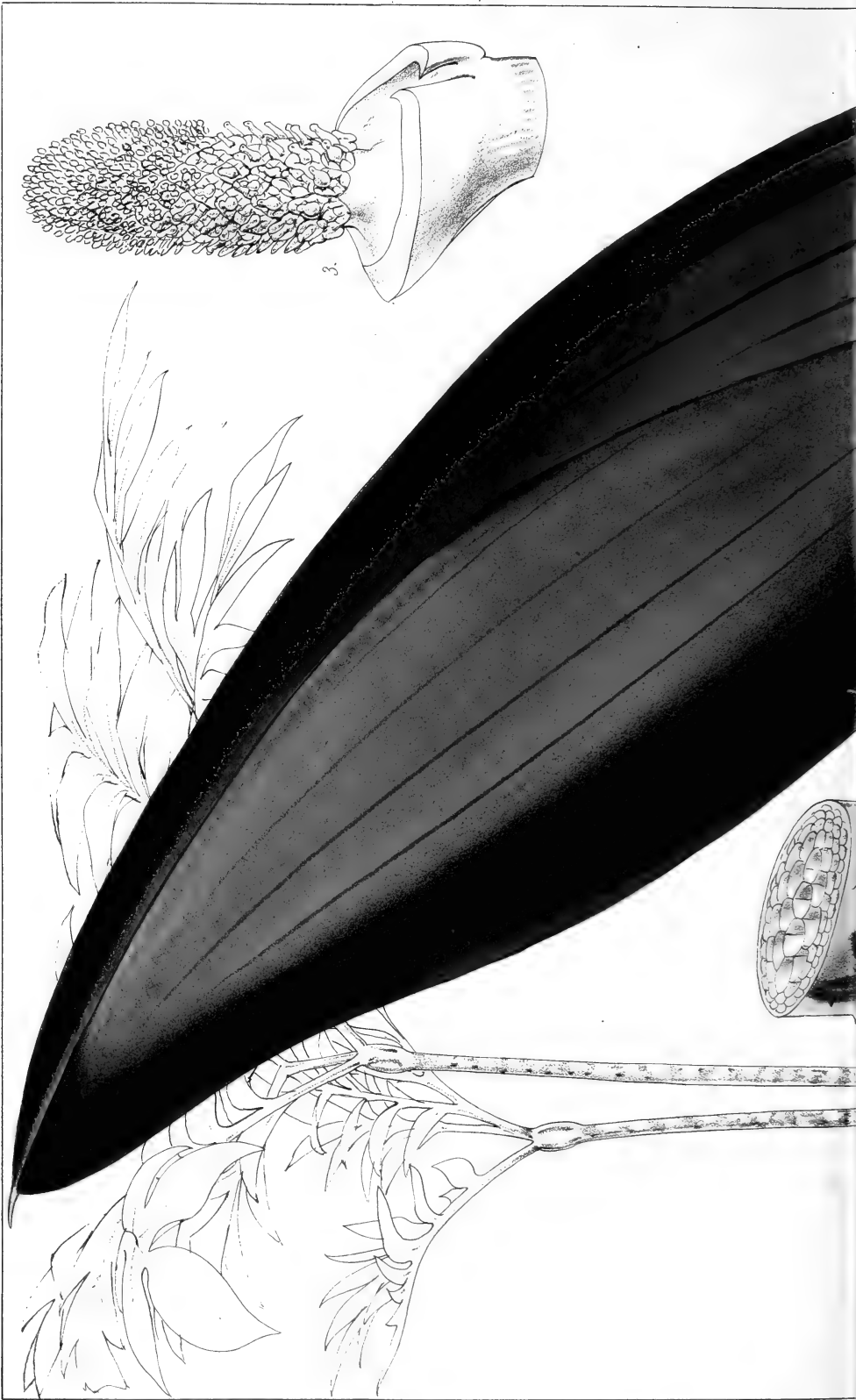
Caudex assurgent, reaching two feet long. *Petioles* fifteen to eighteen inches long, green, terete. *Geniculum* half to five-eighths of an inch long. *Leaves* two feet across, digitately multifoliate, subcoriaceous, bright dark green above, paler beneath; *petiolules* an inch long, suddenly swollen above the base; *leaflets* usually nine, narrow-lanceolate, ten to twelve inches long, fifteen to eighteen lines broad, acute or acuminate, very gradually cuneately narrowed at the base, feather-veined; *main veins* ten to twelve, slender, immersed, erecto-patent, ending in a continuous *pseudo-nerve* a line and a half to two lines from the edge. *Peduncles* stout, green, erect, two to three inches long. *Spathe* bright green, lanceolate, three inches long, finally reflexed. *Spadix* sessile, livid violet-purple, as long as the spathe. *Berries* bright scarlet, four lines long, obovoid, nearly black on the apex.

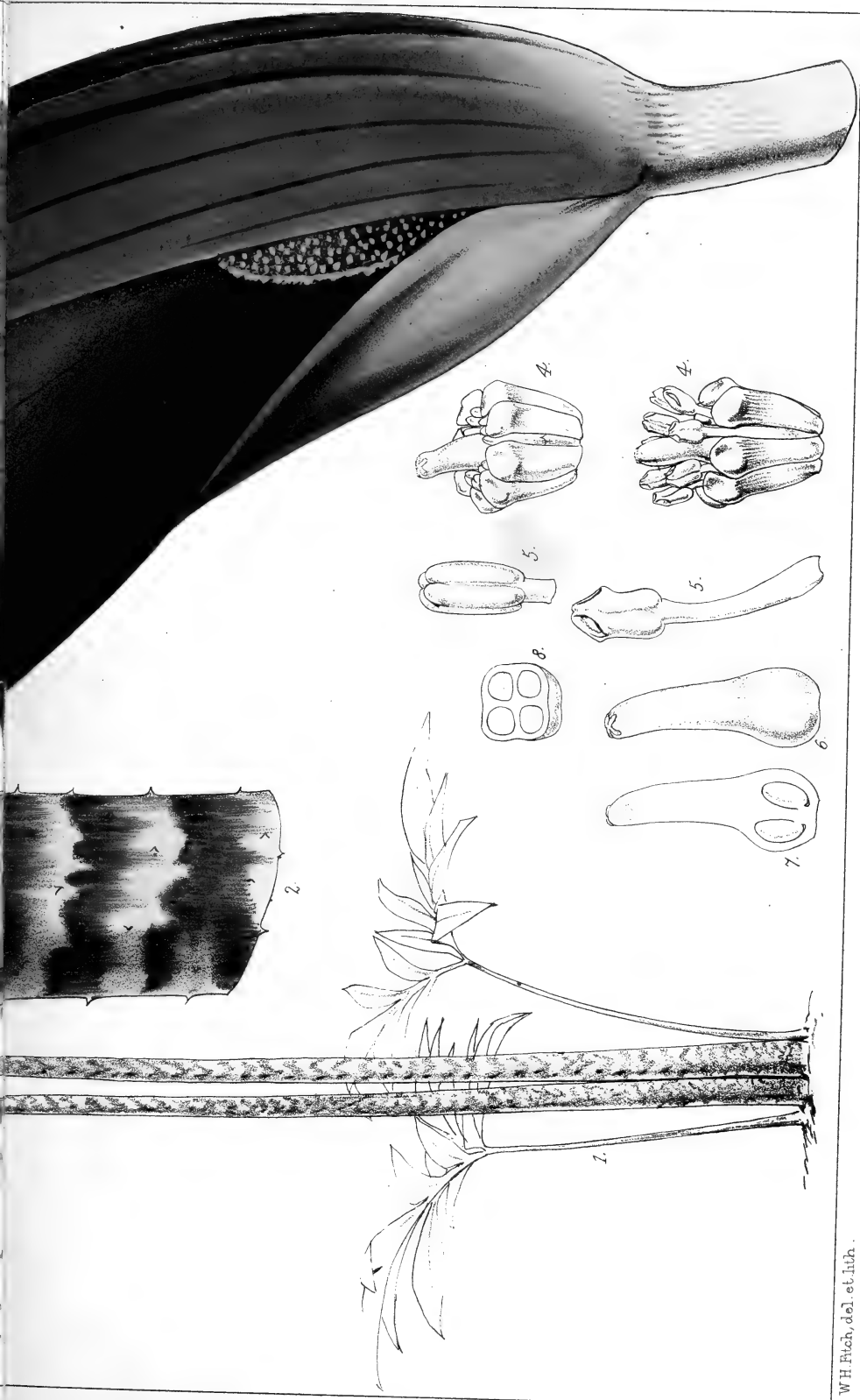
TAB. 281.—1, pair of flowers viewed from above; 2, single flower viewed from the side; 3, ovary with stamens; 4, horizontal section of ovary: all magnified.—*J. G. B.*

A. variabile is a handsome species, which, when well grown, resembles a small palm tree, from its fine, spreading, digitate leaves. The stem is rather weak, rooting into the air and requiring support. I obtained the plant, some years since, from Mons. L. Van Houtte, of Ghent.—*W. W. S.*



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TAB. 282.

Natural Order AROIDEÆ.
Genus DRACONTIUM, Linn.

- D. ASPERUM (*C. Koch in Ill. Hort. xiii. Misc. p. 14, cum icone*). Petiolis 5—6 pedibus deorsum asperis, foliis subhysteranthis deltoideopedatis 3—4 ped. latis cruribus lateralibus dichotomiter furcatis, centrali simplici, omnibus pinnatis pinnis inæqualibus acutis basi decurrentibus majoribus profunde pinnatifidis, spathis oblongo-involutis subpedalibus breviter pedunculatis, spadicebus oblongo-cylindricis $1\frac{1}{2}$ —2 poll. longis, perianthii purpurei segmentis sæpissime 7—8. — *Amorphophallus nivosus*, Lemaire, *Jard. Fleuriste*, t. 424. *Dracontium elatum*, Masters in *Gard. Chron.* 1870, p. 344, t. 58?

A native of Para, discovered by M. Baraquin in 1863.

Corm hemispherical, half a foot broad, naked on the lower surface, furnished on the upper one with copious cormlets and fleshy rootlets. *Spathe* developed generally when there is no leaf, but sometimes appearing before the old leaf fades. *Petiole* erect, five to six feet high, an inch thick, reddish green blotched with gray, rough with raised points in the lower half. *Leaf* deltoid-pedate, three to four feet broad, with three principal divisions, of which the two outer are dichotomously forked below the middle, all the three pinnate to the midrib, with numerous acute irregular decurrent divisions, of which the large ones are deeply pinnatifid; texture membranous; upper surface bright green, lower paler; *veinlets* of the ultimate divisions erecto-patent, uniting in an irregular pseudo-nerve near the margin. *Peduncle* an inch long, half an inch thick. *Spathe* very fleshy, dark lurid purple, reaching a foot long. *Spadix* an inch and a half to two inches long, eight to nine lines thick, mounted on a short thick *pedicel*. *Perianth-lobes* usually seven or eight, ligulate-spathulate, inflexed at the apex. *Stamens* seven to eight, alternate with the segments of the perianth; the *filaments* at last a little longer. *Ovary* three-celled, each cell uniovulate.

It seems likely that *Dracontium elatum* of Masters will prove identical with this species, and the supposed locality of "Sierra Leone" to be a mistake.

TAB. 282.—1, whole plant, much reduced; 2, portion of the stem, life size; 3, spadix, life size. 4, two flowers in different stages of development; 5, two stamens in different stages; 6, ovary; 7, vertical section of ovary; 8, horizontal section of ovary: all magnified.—*J. G. B.*

This is a plant of noble appearance, well worthy of a place in any collection. It is remarkable for its fine, tall, straight leaf-stalk, which is beautifully mottled with rich brown and greyish white, and bears at the apex a very large, spreading, much divided leaf, of a deep green colour. I received the tubers of this plant, several years since, from Mons. Linden, of Brussels. It is easy of cultivation in a moist stove, grown in strong turfy loam and a little peat, and is easily increased by offsets.—*W. W. S.*





W. H. Fitch: del et lith.

J. N. Fitch: imp.

Typhonium Roxburghii, Schott.

TAB. 283.

Natural Order AROIDEÆ.

Genus TYPHONIUM (*Schott in Wien. Zeitschr.* 1829, iii. p. 72). Spatha concolor, basi arcute convoluta. Spadix appendice nudo longo, organis neutris ad ovaria contiguis, ab antheris remotis. Antheræ connectivum haud exsertum. Ovula 1 raro 2 basifixæ. Herbæ Indiæ orientalis habitu Ari.—*Schott, Prodr. Aroid.* p. 105.

T. ROXBURGHII (*Schott, Aroid.* i. p. 12). Foliis deltoideo-hastatis acutis 4—6 poll. longis plus minus profunde trilobatis lobis lateralibus patentibus, spathæ laminâ ovata spadice subæquante, organis neutris refractis, spadice breviter stipitato.—*Schott, Prodr.* p. 106.

A native of the East Indies.

Root of numerous fleshy fibres. *Petioles* slender, green, six to nine inches long. *Leaves* hastate-deltoid, more or less deeply three-lobed, four to six inches long, acute, the lateral divisions spreading; texture rather fleshy; both sides green; the three divisions feather-veined, the erecto-patent *veinlets* uniting in a distinct undulated *pseudo-nerve* a short distance within the edge. *Peduncle* shorter than the petioles. *Spathe* purple, fleshy, six to nine inches long, convolute at the base, so as to hide all below the ring of anthers. *Ovaries* crowded close below the ring of deflexed neutral organs, which are separated from the anthers by a vacant space. *Barren appendage of the spadix* four to six inches long, lurid purple, shortly stipitate, three to four lines thick at the base, tapering gradually upwards.

TAB. 283.—1, spadix complete, life size; 2, fertile stamens; 3, neutral organs; 4, ovary; 5, vertical section of ovary: all magnified.—*J. G. B.*

An interesting little *Aroid*, requiring moist stove treatment while in the growing state, and to be removed when at rest to a cooler and drier temperature, and then but little supplied with water. I am indebted to the Royal Botanic Gardens at Kew for this species, which I obtained from that establishment in May, 1866.—*W. W. S.*



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W.H. Fitch, del. et lith.

J.N. Fitch imp.

Hohenbergia coelestis, Baker.

TAB. 284.

Natural Order BROMELIACEÆ.

Tribe BROMELIÆÆ.

Genus HOHENBERGIA (*Schult. fil. Syst. Veg.* vii. 1251 (anno 1830) *excl.*

H. strobilacea). Perianthium superum, segmentis 3 exterioribus sepaloideis siccis aristatis supra ovarium liberis, 3 interioribus longioribus petaloideis liberis ligulato-spathulatis navicularibus diutine conniventibus intus basi squamis fimbriatis 2 appendiculatis. Stamina 3 perigyna 3 epipetala, filamentis filiformibus, antheris lineari-oblongis versatilibus. Ovarium inferum, triloculare, ovulis in loculo multis axillaribus vel in § *Echinostachys* 2 ex apice pendulis; stylus filiformis; stigmata 3 lineari-obcuneata, spiraliter torta. Fructus subbaccatus, trilocularis, segmentis exterioribus siccis aristatis coronatus. — *Æchmea*, *Auct. ex parte non R. & P. Pothouava et Pironneava*, *Gaud. Atl. Bon.* (anno 1839—1846, *nomina sola*). *Hoplophytum*, *Beer, Brom.* p. 129 (anno 1857). Herbæ turionibus erectis foliis cartilagineis latis dorso convexis deorsum arete imbricatis margine spinoso-dentatis, caulibus centralibus foliis siccis bractæiformibus sæpe saturate rubris instructis, floribus paniculatis vel spicatis.

H. CÆLESTIS (*Baker*). Foliis ad turionem 9—12 cartilagineis lanceolatis erectis sursum falcatis 12—15 poll. longis medio 15—18 lin., basi 2 poll., latis, dorso valde convexis, apice cuspidatis, margine dentibus argutis copiosis ascendentibus $\frac{1}{2}$ lin. longis munitis, supra obscure viridibus, dorso griseo-lepidotis obscure fasciatis, caulibus erectis 6—9 poll. longis, floribus 30—50 in paniculam congestam thyrsodeam dispositis, bracteis parvis integris rubris lanceolato-acuminatis, infimis vix 1 poll. longis, perianthii segmentis calycinis deltoideis longe cuspidatis interioribus petaloideis cæruleis duplo brevioribus. — *Hoplophytum caeleste*, *K. Koch in Walp. Ann.* v. p. 70.

A native of Brazil.

Leaves nine to twelve to a tuft, very horny in texture, closely imbricated downwards, falcate in the upper half, the largest twelve to fifteen inches long, fifteen to eighteen lines broad at the middle, dilated gradually to two inches broad above the base, the apex with a deltoid-acuminate cusp, the edge closely armed with minute ascending concolorous spines; the upper surface dull green, the lower gray-green, abundantly lepidote, obscurely

fasciated horizontally. *Flower-stem* erect, six to nine inches high, just reaching to where the leaves spread, so as to leave room for the panicle. *Flowers* thirty to fifty in a close thyrsoïd *panicle* about half as long as the stem. *Bracts of the main axis* rose-red, lanceolate-acuminate, entire, erecto-patent, the lowest under an inch long. *Perianth* sessile, seven to eight lines long; the oblong *ovary* half the length; the delicate blue connivent ligulate-spathulate *petals* about twice the dry deltoid-aristate *sepals*.

There seems to be some danger of this genus, *Hohenbergia*, which was defined by the younger Schultes in his excellent *résumé* of the *Bromeliaceæ*, published in 1830, being altogether crowded out of existence by more recent creations. Beer has restricted the name to *H. strobilacea*, Schultes, which the latter author regarded as an aberrant member of the genus, and which Klotzsch separated from it long ago under the name of *Acanthostachys*. According to our view, *Hohenbergia* should be kept up to include at least all the species to which the character above given applies. The following is a list of the published species, which belong to *Hohenbergia* proper, which are known to us from figures or authentic specimens, excluding several yet unnamed or of which we have seen descriptions alone:—

§ *Pironneaua*, Gaudich.—Inflorescence paniculate.

GROUP 1.—Panicle large, lax, with elongated, laxly pinnate branches.

1. *H. PLATYNEMA*, Baker = *Pironneaua platynema*, Gaudich. Atl. Bonite, t. 64.
2. *H. PYRAMIDALIS*, Baker = *Æchmea pyramidalis*, Benth. Bot. Sulph. p. 173.

GROUP 2.—Panicle large, lax; the branches close clusters, the lower peduncled.

3. *H. DISTANS*, Baker = *Æchmea distans*, Griseb. Fl. Brit. West Ind. p. 592.
4. *H. GLOMERATA*, Baker = *Pironneaua glomerata*, Gaudich. Atl. Bonite, t. 63. *Æchmea glomerata*, Bot. Mag. t. 5668. *Hoplophytum angustum*, Beer, Brom. p. 136.
5. *H. ERYTHROSTACHYS*, A. Brong. Journ. Soc. Imp. Hort. France, July, 1864, *cum icone*; Journ. Hort. 1869, p. 217, t. 53.

GROUP 3.—Panicle large, lax, narrow, simply pinnate.

6. *H. PANICULIGERA*, Baker = *Bromelia paniculigera*, Swartz, Prodr. Fl. Ind. Occ. p. 56; Willd. Sp. Plant. ii. p. 9;

Schultes, *fil.*, Syst. Veg. vii. p. 1280. *Æchmea paniculigera*, Griseb. Fl. Brit. West Ind. p. 592. *Æchmea suaveolens*, Knowles et West. Flor. Cab. t. 134. *Hoplophytum suaveolens*, Beer, Brom. p. 135. *Billbergia purpureo-rosea*, Lindl. Bot. Mag. t. 3304. *Hoplophytum*, Beer, p. 135.

7. H. LAXIFLORA, Baker = *Æchmea laxiflora*, Benth. Bot. Sulph. p. 173.

GROUP 4.—Panicle large, lax; the branches elongated simple spikes.

8. H. ODORA, Baker = *Billbergia odora*, Miquel, Linnæa, xviii. p. 377.

GROUP 5.—Panicle small, close, thyrsoid.

9. H. BRACTEATA, Baker = *Bromelia bracteata*, Swartz, Prodr. Fl. Ind. Occ. p. 56; Willd. Sp. Plant. ii. p. 9; Schultes, *fil.*, Syst. Veg. vii. p. 1280. *Æchmea bracteata*, Griseb. Flor. Brit. West. Ind. p. 592. *Bromelia aquilega*, Salisb. Parad. Lond. t. 40. *Æchmea aquilega*, Griseb. loc. cit. *Bromelia exudans*, Lodd. Brit. Cab. t. 801. *B. paniculigera*, Reich. Icon. Bot. Exot. t. 239—240, non Swartz. *Hoplophytum paniculatum*, Beer, Brom. p. 130.
10. H. FASCIATA, Schultes, *fil.*, Syst. Veg. vii. 1255 = *Billbergia fasciata*, Lindl. Bot. Reg. t. 1130. *B. rhodocyanea*, Lemaire, Flore des Serres, t. 267; Hook. Bot. Mag. t. 4883. *Hoplophytum fasciatum*, Beer, Brom. p. 129.
11. H. DISTICHACANTHA, Baker = *Æchmea distichacantha*, Lemaire, Jard. Fleur. t. 269. *Hoplophytum*, Beer, p. 136. *Billbergia polystachya*, Paxton, Flow. Gard. iii. t. 80.
12. H. CŒLESTIS. Vide *supra*.
13. H. MELINONII, Baker = *Æchmea Melinonii*, Bot. Mag. t. 5235.

GROUP 6.—Panicles close, very narrow, cylindrical.

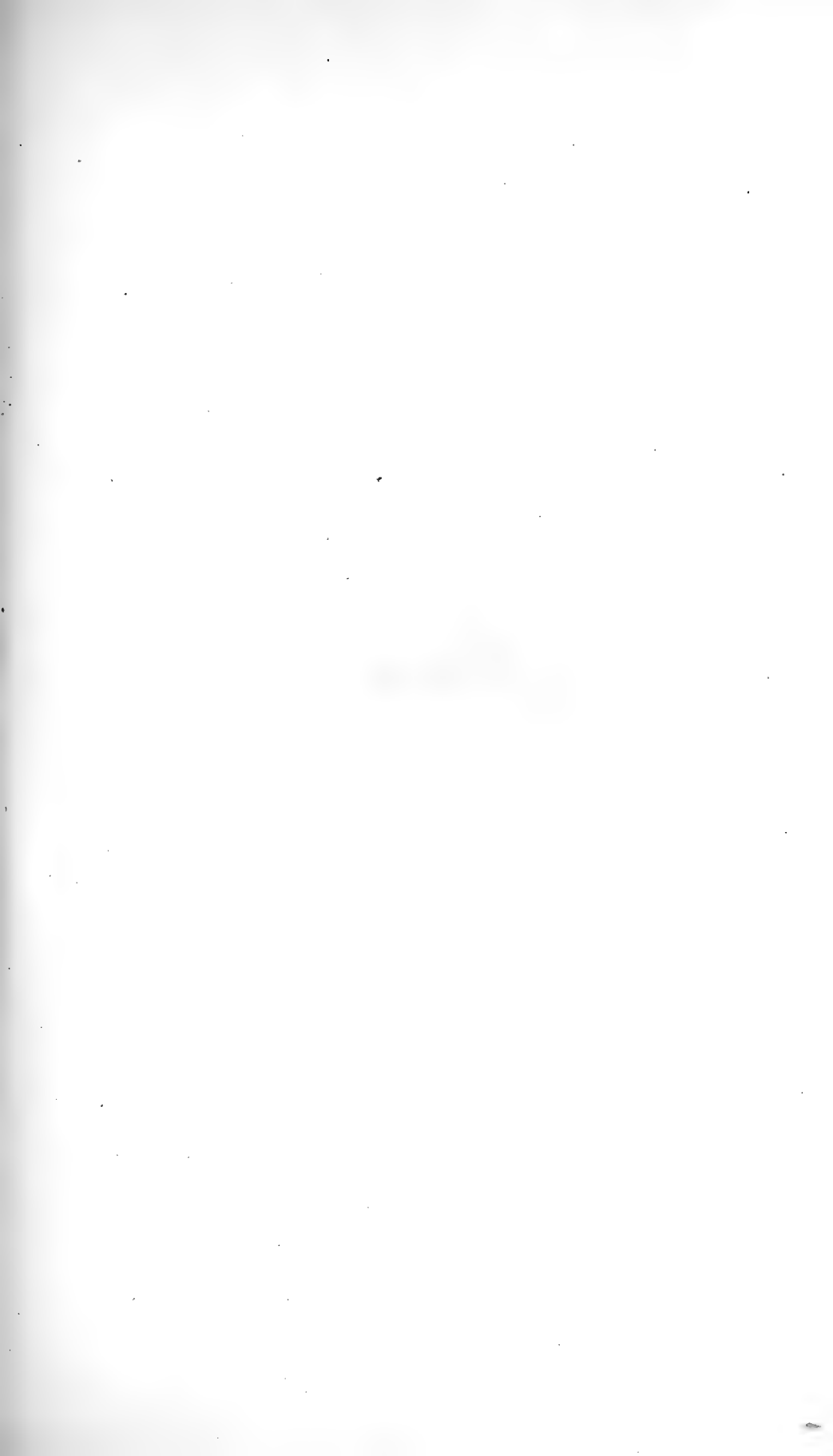
14. H. MERTENSII, Baker = *Bromelia Mertensii*, G. F. Meyer, Esseq. p. 144. *Billbergia*, Miquel, Linnæa, xviii. p. 376. *Æchmea*, Hook. Bot. Mag. t. 3186. *Hoplophytum Mertensis*, Beer, Brom. p. 134.
15. H. MARTII, Baker = *Æchmea spicata*, Mart. in Roem. & Schult. Syst. Veg. vii. 1271; Popp. et Endl. Nov. Gen. p. 43. *Hoplophytum spicatum*, Beer, Brom. p. 134 (who gives the same name to another species, at page 140).
16. H. ANGUSTIFOLIA, Baker = *Æchmea angustifolia*, Popp. et Endl. Nov. Gen. t. 159. *Hoplophytum*, Beer, p. 132.

§§ *Pothuava*, Gaudich.—Inflorescence spicate.

17. *H. NUDICAULIS*, Baker = *Bromelia nudicaulis*, Linn. Sp. p. 409; Mill. Dict. No. 1; Hook. Exot. Flora, t. 153, non Lindl. Bot. Reg. t. 203. *Billbergia nudicaulis*, Lindl. Bot. Reg. sub. t. 1068. *Æchmea*, Griseb. Flor. Brit. W. Ind. p. 592. *Hoplophytum*, K. Koch, Walp. Ann. v. p. 70. *Bromelia lutea*, G. F. Meyer, Esseq. p. 145. *Billbergia lutea*, Schult. fil., Syst. Veg. vii. 1258. *Hoplophytum lanuginosum*, Beer, Brom. p. 138. *H. unispicatum*, Beer, loc. cit.
18. *H. SPICATA*, Baker = *Pothuava spicata*, Gaudich. Atl. Bonite, t. 117. *Hoplophytum*, Beer, Brom. p. 140. (*Vide* sp. 15).
19. *H. COMATA*, Baker = *Pothuava comata*, Gaudich. Atl. Bonite, t. 116. *Hoplophytum*, Beer, Brom. p. 140.
20. *H. MUCRONIFLORA*, Baker = *Æchmea mucroniflora*, Hook. Bot. t. 4832. *Hoplophytum*, Beer, Brom. p. 131.
21. *H. LEGRELLIANA*, Baker, tab. nostr. 285.

TAB. 284. — 1, flower complete, with bract; 2, flower divested of one of its outer segments; 3, petal with two stamens; 4, pistil: all magnified.—*J. G. B.*

Hohenbergia caelestis is an interesting species, with sky-blue flowers, and reddish flower-bracts. It is easily grown in a moist warm stove, which seems essential for its successful cultivation. I obtained the plant, some time since, from the Continent, but I have now lost all further history of it.—*W. W. S.*





W.H. Fitch, del. et lith

J.N. Fitch imp.

Hohenbergia Legrelliana, Baker.

TAB. 285.

Natural Order BROMELIACEÆ.

Tribe BROMELIÆÆ.

Genus HOHENBERGIA, *Schultes fil.*

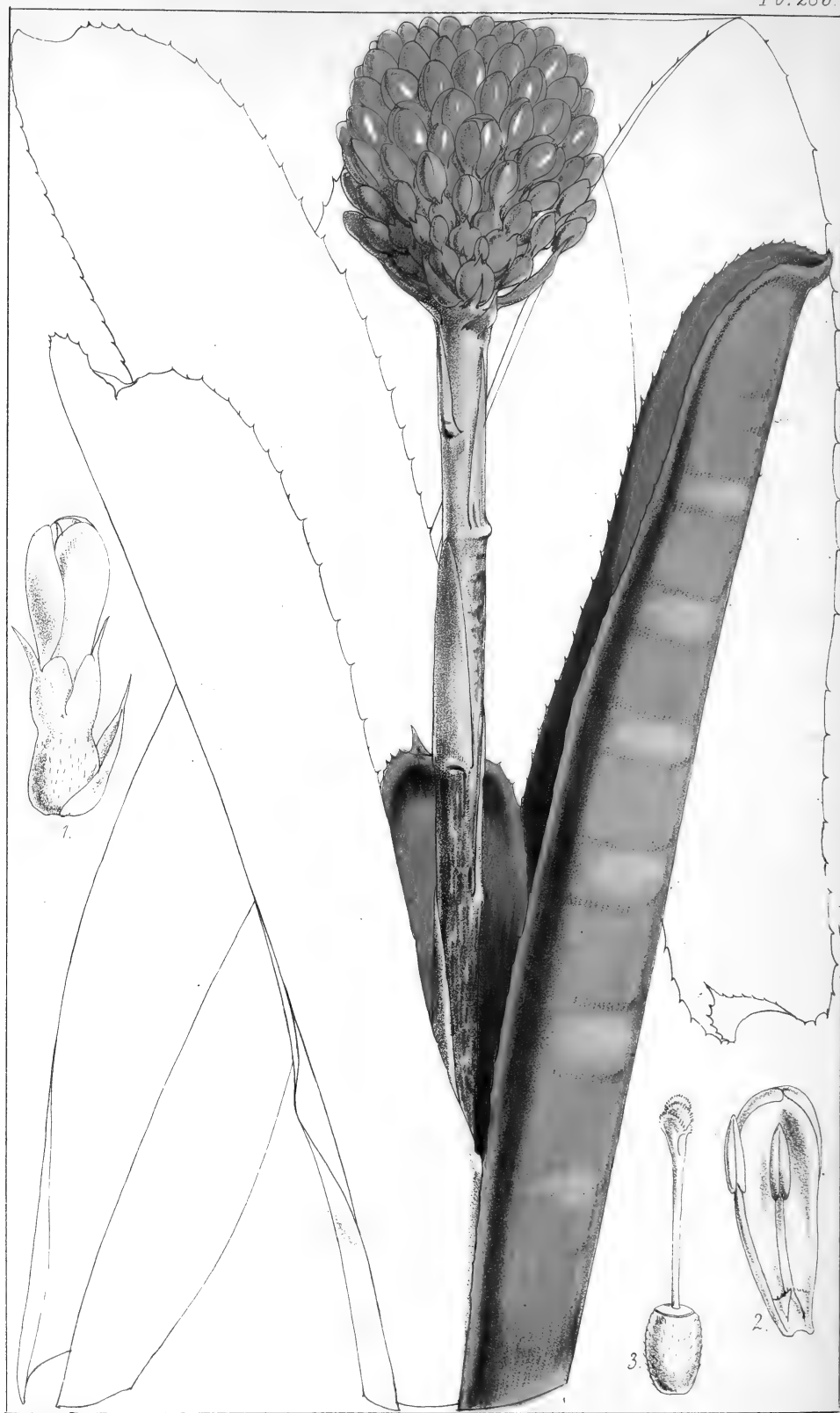
- H. LEGRELLIANA, *Baker*. Foliis ad turionem circiter 20, lanceolatis crasse cartilagineo-coriaceis, maximis 12—15 poll. longis, deorsum 12—15 lin. latis, e basi ad apicem acuminatum sensim angustatis, utrinque obscure pallide viridibus, haud fasciatis, precipue subtus griseo-furfuraceis, margine spinis duris falcatis concoloribus copiosis munitis, exterioribus valde falcato-recurvatis, caulibus semipedalibus erectis foliis multis bracteiformibus scariosis lanceolatis adpressis munitis, floribus 14—15 lin. longis 12—20 in spicam confertam dispositis, bracteis saturate rubris lanceolatis acuminatis serratis floribus paulo brevioribus, ovariis pallidis lagenæformibus, sepalis lanceolatis longe aristatis rubris semipollicaribus petalis saturate purpureo-rubris paulo brevioribus.—*Billbergia Legrelliana*, *Hort.*

A native most likely of Brazil.

Tufts rising to a height of about a foot. *Leaves* about twenty, lanceolate, much recurved, the largest twelve to fifteen inches long, twelve to fifteen lines broad downwards, narrowed very gradually from the base to an acuminate point; in texture thicker than in the other species of the genus, and resembling those of a *Bromelia*; the edge margined with copious sharp ascending concolorous spines three-fourths to one line long; both sides pale dull green, especially the lower one gray-furfuraceous. *Flower-stem* half a foot high, clothed with numerous ascending gray scariosæ entire lanceolate bract-like leaves. *Flowers* twelve to twenty in a close spike, the whole flower fourteen to fifteen lines long; *bracts* bright red, lanceolate-acuminate, minutely toothed, nearly as long as the calyx; *ovary* pale, flask-shaped, five-eighths of an inch long; *sepals* lanceolate, bright red, with a long awn, rather shorter than the bright red-purple permanently connivent ligulate-spathulate *petals*.

TAB. 285.—1, flower complete, with bract; 2, petal with two stamens; 3, pistil; 4, horizontal section of ovary: all magnified.—*J. G. B.*

The crimson flower and flower-bracts of this species of *Hohenbergia* render the plant attractive. It is easy of cultivation in a damp stove, where it flowers regularly every season. When not growing, it may have a season of rest, by being not much supplied with water. Another species received from the Continent some time since, and of which the history has been lost.—*W. W. S.*



WH Fitch, del et lith.

JN Fitch, imp

Hohenbergia (*Echinostachys*) *calyculata*, Baker.

TAB. 286.

Natural Order BROMELIACEÆ.

Sub-order BROMELIÆ.

Genus HOHENBERGIA, *Schultes fil.* (See. Tab. 285).

Sub-genus ECHINOSTACHYS (*A. Brong. in Planch. Hort. Don.* p. 25, *ut genus*). Ovula in loculis gemina ex apice pendula. Semina solitaria.—*Beer, Brom.* p. 148.

H. CALYCVLATA, *Baker*. Foliis ad turionem 10—12 cartilagineis loratis erecto-patentibus 12—15 poll. longis 21—24 lin. latis basi vix dilatatis apice obtuse rotundatis apiculatis margine dentibus minutis concoloribus copiosis ascendentibus instructis, supra saturate viridibus subtus albidoviridibus distincte horizontaliter fasciatis, caulibus erectis 6—9 poll. longis purpureis lanuginosis foliis paucis bracteiformibus membranaceis albidis adpressis, floribus 30—60 in glomerulum capitatum subglobosum congestis, bracteis lanceolatis cuspidatis roseis coriaceis calyce brevioribus, perianthii segmentis exterioribus calycinis longe aristatis interioribus petaloideis flavis duplo brevioribus.—*Hoplophytum calyculatum, Morren, Belg. Hort.* 1865, p. 162, t. 11.

A native of Brazil.

Leaves ten to twelve to a tuft, very horny in texture, closely imbricated downwards, slightly falcate in the upper half, the central ones twelve to fifteen inches long, an inch and a half to two inches broad, very little dilated at the base, bluntly rounded at the point with a minute apiculus; bright green on the upper surface, with very indistinct horizontal bands; pale glaucous-green and distinctly fasciated, with paler and darker horizontal bands on the broadly rounded back; the edge copiously furnished with minute ascending concolorous teeth. *Stem* six to nine inches high, erect, terete, purplish, cottony, furnished with about half a dozen membranous lanceolate leaves, an inch and a half to two inches long, closely adpressed to it. *Flowers* thirty to sixty in a dense terminal roundish head an inch and a half broad. *Bracts* scariosc, reddish, lanceolate-acuminate, rather shorter than the calyx. *Flower* seven to eight lines long; the oblong *ovary* tinged with red; the conspicuously aristate coriaceous calycine lobes about half as long as the bright yellow ligulate-spathulate *petals*.

The only other species of this sub-genus with which we are acquainted is *E. Pineliana*, A. Brong. in Planch. Hort. Donat. *loc. cit.* figured Bot. Mag. t. 5321.

TAB. 286.—1, flower complete, with bract; 2, petal with two stamens; 3, pistil: all magnified.—*J. G. B.*

The yellow flowers of this species of *Hohenbergia* are massed into a compact rounded head, and, being well thrown above the foliage, attract attention. It is quite worthy of cultivation, and requires but little care, placed in a warm damp stove. The plant I received from Mons. Van Houtte, of Ghent.—*W. W. S.*



TAB. 287.

Natural Order BROMELIACEÆ.

Sub-order BROMELIÆ.

Genus CRYPTANTHUS (*Klotzsch in Otto et Dietr. Allg. Gartenzeit.* iv. (1836) p. 299. Perianthium superum, segmentis exterioribus sepaloides siccis in tubum triquetrum supra ovarium longe connatis apice liberis deltoideis, interioribus petaloideis multo longioribus falcatis deorsum connatis, basi esquamosis. Stamina prope basin tubi inserta, filamentis filiformibus antheris parvis oblongis. Ovarium inferum, triloculare, loculis multiovulatis; stylus filiformis; stigmata lanceolata, complanata, patula. Fructus subbaccatus, indehiscens, calyce persistente coronatus, seminibus multis horizontalibus funiculo epapposo. — *Endlich, Gen.* p. 1361; *Beer, Brom.* p. 75. *Pholidophyllum, Vis. in Otto et Dietr. Allg. Gartenzeit.* xvi. p. 30.

C. ACAULIS, Beer, loc. cit. var. *PURPUREUS, Baker.* Foliis paucioribus, minoribus (maximis 2—3 poll. longis deorsum 8—9 lin. latis), saturate purpureo-viridibus.

A native of the southern provinces of Brazil.

Tufts subsessile, densely cæspitose. *Leaves* about a dozen to a tuft, cartilaginous in texture, lanceolate, two to three inches long, eight to nine lines broad, narrowed gradually from near the base to a long point, falcately recurved, undulated towards the edge, purplish green, clothed on the back and less densely towards the base with fine gray lepidote scales, bordered with minute ascending concolorous teeth. *Flowers* as in the two other varieties, subsessile in a central cluster. *Calyx* horny, triquetrous, half an inch long. *Petals* white, lanceolate, falcate, twice the calyx.

Figures of the typical form (*Tillandsia acaulis*, Lindley; *C. acaulis*, Beer; *C. undulatus*, Klotzsch) will be found in Bot. Reg. t. 1157, and an excellent recent one, with full dissections, in Wawra Reise Max. t. 87. This has less densely crowded tufts, with larger green leaves. The third variety (*P. zonatum*, Vis. loc. cit.) has leaves two inches broad, long in proportion, horizontally fasciated on the upper surface, on a lurid-green ground, with broad beach-mark-like bands of comparatively large gray lepidote scales, the base a very bright shining yellowish green.

TAB. 287. — 1, two flowers in different stages; 2, stamen; 3, pistil; 4, horizontal section of ovary: all magnified.—*J. G. B.*

This is a very curious dwarf plant, with spreading leaves covered with remarkable lepidote scales, well worth examining under the microscope. It makes offsets freely, and is easily cultivated in a moist warm stove. I have grown the plant for some years, but from whence I obtained my stock have no notes to inform me.—*W. W. S.*

TAB. 288.

Natural Order BROMELIACEÆ.

Sub-order TILLANDSIEÆ.

Genus TILLANDSIA, *Linn.*Section PLATYSTACHYS, *C. Koch.*

T. SETACEA (*Swartz, Prodr. Fl. Ind. Occ. i. 593*). Turionibus subsessilibus cæspitosis, foliis basalibus 20—40 dense rosulatis 6—12 poll. longis lineari-filiformibus convolutis apice setaceis basi cite dilatatis coriaceis griseis concoloribus utrinque tenuiter albido-lepidotis exterioribus vel omnibus falcatis, caulibus erectis foliis paulo brevioribus foliis reductis basi longe vaginantibus munitis, floribus 6—20 in paniculatam congestam thyrsoidem dispositis, sepalis siccis lanceolatis basi connatis, petalis ligulato-spathulatis violaceo-purpureis calyce duplo longioribus, staminibus cum stylo longe exsertis.—*Schultes, fil., Syst. Veg. vii. 1207, non Hook. Bot. Mag. t. 3275. T. tenuifolia, Linn. ex parte. T. pulchra, Hook. Exot. Fl. t. 154.*

Widely diffused in Tropical America, extending from Cuba southward to Uruguay and Chili.

Tufts sessile or subsessile, often cæspitose. *Leaves* twenty to forty in a dense basal rosette, six to twelve inches long, linear-filiform, convolute, suddenly dilated at the base, tapering into a long setaceous point, coriaceous, uniform gray-green, more or less albido-lepidote all over, falcately recurved. *Stem* erect, rather shorter than the leaves, closely wrapped round by the imbricating long sheathing bases of its numerous reduced leaves. *Flowers* six to twenty in a close thyrsoid panicle, which in poorly-developed examples is reduced to a simple spike. *Bracts* lanceolate, acute, distichous, gray, scariose, six to nine lines long, many-nerved, wrapped tightly round the flowers. *Calyx* half an inch long, scariose, lepidote, the lanceolate divisions connate at the base. *Petals* bright violet-purple, ligulate-spathulate, twice as long as the calyx, patulous at the tip. *Stamens* and *style* both much exserted. *Capsule* twice the calyx, the gray horny divaricating segments filled with minute seeds on long filiform funiculi breaking up in copious fine white threads.

TAB. 288.—1, single flower complete; 2, petal with two stamens; 3, pistil; 4, portion of a leaf: all magnified.—*J. G. B.*

I grow this plant without difficulty, attached to a small block of wood, in a moist damp stove near the light. It is a small but interesting species, with bright violet-purple flowers tipped with yellow. I am indebted to the Royal Botanic Garden at Kew for my stock of the plant.—*W. W. S.*

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